## SEARCH REQUEST FORM Requestor's Serial Name: Number: Phone: \_ Art Unit: \_\_\_\_ Search Topic: Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s). STAFF USE ONLY Date completed: 4/1 Search Site Vendors Searcher: 0, Schreber

CM-1 640 3 Terminal time: \_\_\_\_ STN Elapsed time: Pre-S Dialog CPU time: Type of Search APS N.A. Sequence Total time: \_\_\_\_ Geninfo Number of Searches: A.A. Sequence SDC Number of Databases: Structure DARC/Questel Other Compage Bibliographic

PTO-1500 (9-90)

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BF907809 MR0-UT004
AA593576 n026b04 s
BF907804 MR0-UT004
AA593576 n026b05 s
BF907804 MR0-UT005 s
H98670 yx17c03 s1
AI367864 qq45f09 x
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## ALIGNMENTS

	TITLE JOURNAL MEDLINE COMMENT	ORGANISM REFERENCE AUTHORS	RESULT 1 AW670523 LOCUS DEFINITION ACCESSION VERSION KEYMORDS SOURCE
PO BOX 166, Clay Center, NE 68933-0166, USA PO BOX 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4366 Fax: 402 762 4390 Email: smith@email.marc.usda.gov Single pass sequencing. Bases called and alt_trimmed with phred y0.980904.e. Vector identified by cross_match with the -minscore and -minmatch 12 options. PCR PRImers FORWARD: GTTTTCCCAGTTAGACCAT BACKWARD: GTTTTCCCAGTCAGCGACG Plate: 112 row: I column: 24	Reele,J.W.  Sequence evaluation of four pooled-tissue normalized bovine cDNA sequence evaluation of a gene index for cattle libraries and construction of a gene index for cattle genome Res. 11 (4), 626-630 (2001) 21180013  Contact: Smith TPL USDA. ARS, US Meat Animal Research Center	Bos taurus  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  Bukaryota; Metazoa; Cetartiodactyla; Ruminantia; Pecora; Bovoldea.  Bovidae; Bosinae; Bos.  Bovidae; Bosinae; Bos.  1 (bases 1 to 476)  Smith, T.P. L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T.  Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett  Casas, E., Wray, J.E., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G.  G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G.  Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and	AW670523 476 bp mRNA EST 25-APR-2001 114594 MARC 1BOV Bos taurus cDNA 5', mRNA sequence. AW670523 AW670523.1 GI:7527037 EST. EST.

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                                     1 (bases 1 to 372)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and Keele, J.W.
                                                                                                                                                                                        AW426482
60686 MARC 4
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      Sequence evaluation of four pooled-tissue normalized bovine libraries and construction of a gene index for cattle
                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecesovidae; Bovinae; Bos.
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/db_xref="taxon:9913"
/clone_lib="MARC 1BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                372 bp
480V Bos t
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Library made from pooled tissue from lymph node, of fat, hypothalamus, and pituitary."
86 c 121 g 94 t
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PCR PRimers

FORWARD: AGGAAACAGGTATGACCAT

BACKWARD: GTTTTCCCAGTCACGACG

Plate: 29 row: I column: 3

Seq primer: ATTTAGGTGACACTATAG.
               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; 1 (bases 1 to 504)
Bertani, G.R., Johnson, R.K. and Pomp, D.
                                                                 Sus scrofa
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Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, U
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Fax: 402 762 4390
      expression
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/db_xref="taxon:9913"
/clone_lib="MARC 4BOV"
/tissue_type="pooled"
/lab_host="DH10B"
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60 c 79 g 85 t
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Unpublished (2000)
Contact: Bertani G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Animal Science A218c, Lincoln, NE 68583-0908, USA Tel: 4024724515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FORWARD: ACAATTTCACACAGGATGGTAAAGGG (ARBITRARYB)
BACKWARD: ACGACTCACTATAGGGCTTTTTTTTTTTCA (ANCHOR5)
Seq primer: M13forward -21
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University of Nebraska
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RST33033 Athersys RAGE Library
BG213427
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79; Conserv
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                                                                                                                                                                                                                                                           Harrington, J.J., Sherf, B., Rundlett, S., Jackson, P.D., Perry, R., Cain, S., Dahl, T., Thornton, M., Ramachandran, R., Whittington, J., Lerner, L., Krashoc, D., McElligott, K., Clark, S., Mays, R., Smith, Eveloso, N., Hess, J., Cothren, K., Lo, K., Offenbacher, J., Danzig, J.
                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 277)
                                                                                                                                                                          Activation of Gene Expression Nat. Biotechnol. 19 (5), 440 Contact: Scott J. Cain
                                                                                                             Athersys, Inc.
3201 Carnegic Ave, Cleveland,
Tel: 216 431 9900
Fax: 216 361 9596
                                                                                                                                                                                                                               Creation of Genome-wide Protein Expression Libraries using Random
                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
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                                                                                                                                                                                                                                                and Ducar, M.
                                                                                            Email: scain@athersys.com
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                                                                            quality sequence stop: 254.
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/dev_stage="follicular phase"
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/sex="female"
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/db_xref="taxon:9823"
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          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                              Location/Qualifiers
/clone_lib="Athersys RAGE Library"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
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HSPD20024 HM3
F29887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lanfranchi,G., Muraro,T., Caldara,F., Pacchioni,B., Pallavici Pandolfo,D., Toppo,S., Trevisan,S., Scarso,S. and Valle,G. Identification of 4370 expressed sequence tags from a 3'-end-specific cDNA library of human skeletal muscle by DNA sequencing and filter hybridization Genome Res. 6 (1), 35-42 (1996)
                                                                                                                                                                                                                                                                                                                                            Via Trieste 75, 35121 Padua, Italy ABI Chromatograms and other information are available on WWW http://grup.bio.unipd.it.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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62 9 82 t
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                                                                                                              ds cDNA was sonicated and size-selected in the range 350-550 bp. The 3' specific fragments were selected streptavidin coated magnetic beads, ligated to non-palindromic BstXI adapters, NotI digested and directionally cloned into BstXI-NotI cut pcDNAII vects 67 g 80 t
                                                                                                                                                                                                                                                  /clone="s4000085B05"
/clone_lib="HM3"
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                                                  GGTCACATGGATGA 182
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CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing by: Washington University Genome Sequencing distribution: NCI-CGAP clone distribution info found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 923 Std Error: 0.00
Seq primer: -40UP from Gibco
High quality sequence stop: 260.
Location/Qualifiers
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wn15h12.x1
similar to
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Mammalla; Eutheria; Primates; Catarrhini; Hom
1 (bases 1 to 285)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nlh.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                               Similarity
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                                                                                                                                                                                                                                                                     /note="Organ: stomach; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.69 kb. Life Technologies catalog #:
                                                                                                                                                                                                                                                                                                                                 signet ring cell features"
                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2445575"
                                                                                                                                                                                                                                                                                                                                         /clone_lib="NCI_CGAP_Gas4"
/tlssue_type="poorly differentiated adenocarcinoma with
                                                                                                                                                                                                                                                                                                                       /lab_host="DH10B"
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NCI_CGAP_Gas4 Homo sapiens cDNA clone
TR:075268 075268 F20887_1, PARTIAL CDS
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Mismatches 0;
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                         mRNA sequence.
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AA593576.1
EST.
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                                                                                                                                                                                                                                                     Similarity 100.
74; Conservative
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Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Simpson, A.J
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Eukaryota; Metazoa;
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MR0-UT0049-271000-105-f08 UT
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           GI:2408254
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4460 gacagacagcaccaagaagtaattgcaatttatcggacacaccttcttagtgctgcacag 4519
                                                                                                                                                                                                                                                                                                       226 GACAGACAGCACCAAGAAGTAATTGCAATTTATCGGACACACCTTCTTAGTGCTGCACAG 167
no26b04.s1 NCI_CGAP_Pr22
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Seq primer: puc 18 forward
High quality sequence stop: 295.
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Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R.,
Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F.,
Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Simpson,D.H.,
Brunstein,A., deOliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rudwig Prof. Antonio Prudente 109, 4 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: asimpson@ludwig.org.br
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Proc. Natl. Acad. Sci. U.S.A.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Organ: uterus_tumor; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the puc 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."

73 c 72 g 73 t
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/db_xref="taxon:9606"
/clone_lib="UT0049"
/dev_stage="Adult"
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                                                                                                                                                                                                                                                                                                                                                                                                                            Score 74; DB 11; I
; Pred. No. 4.3e-11;
0; Mismatches 0;
      Homo sapiens cDNA clone
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   IMAGE:1101775 3',
                                     26-SEP-1997
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BF907804/c
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Insert Length: 437 Std Error: 0.00
Seq primer: -40ml3 fwd. ET from Amersham High quality sequence stop: 221.
                                                                                                                                                                                                                                                                                                                                                                                 GGTCACATGGATGA 182
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NCI-CGAP http://www.ncbi.nlm.nih.gov/nclcgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Tumor Gene Index.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nlh.gov
Tissue Procurement: Michael J. Brownstein, M.D., Ph.D.,
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
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                                                                                                                                                                                                                                         BF907804 312 bp mRNA EST 18-JAN-2001
MRO-UT0049-271000-105-f09 UT0049 Homo sapiens cDNA, mRNA sequence.
BF907804
l (bases 1 to 312)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Bala,G.S., Simpson,D.H., Brunstein,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                             Homo sapiens
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with a modified polylinker; 1st strand cDNA was prepared
from normal prostate bulk tissue, and was then primed with
a Not I - oligo(dT) primer. Double-stranded cDNA was
ligated to Eco RI adaptors (Pharmacia), digested with Not
I and cloned into the Not I and Eco RI sites of the
modified pT7T3 vector. Library is normalized, and was
constructed by Bento Soares and M. Fatima Bonaldo. "
a 71 c 66 g 76 t
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/db_xref-"taxon:9606"
/clone-"IMAGE:1101775"
/clone_lib-"NCI_CGAP_Pr22"
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/lab_host="DH10B"
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                                                                                                                         Eutheria;
                                                                                                                                                                                                                          GI:12299262
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Primates;
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Pred. No.
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                                                                                                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl-MRO&t2-MRO-UT0049-
271000-105-f09&t3-2000-10-27&t4-1)
Seq primer: puc 18 forward
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Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
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                                                                                                                                                                                                                                                                                                                                                                                 no24b05.sl NCI_CGAP_Pr22
mRNA sequence.
                                        Tumor Gene Index
(npublished (1997)
(Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Michael J. Brownstein, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 361) RCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap. NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap. National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
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cDNA Library Preparation: M. Bento Soares, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D.
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/clone_lib="UT0049"
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                                                                                      Email: est@watson.wustl.edu
High quality sequence stops: 239
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL;
IMAGE Consortium (info@lmage.llnl.gov) for further |
Thage consortium (info@lmage.llnl.gov)
                                                                                                                                                                                                       Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. I
Tel: 314 286 1800
Fax: 314 286 1810
                                  Insert Length: 1068 Std Error Seq primer: m13 -40 forward High quality sequence stop: 239.
                                                                                                                                                                                                                                                                                                                       M., Hultman, M., Kucaba, T., Le, M., Lennon, G., Marra, M., Parsons, J., Rifkin, L., Rohlfing, T., Soares, M., Tan, F., Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and Wilson, R.

The WashU-Merck EST Project

Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                     Mammalia; Eutheria; Primates; Catarrhini; Homir
1 (bases 1 to 372)
Hillier,L., Clark,N., Dubuque,T., Elliston,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H98670 372 bp mRNA EST 15-DEC-1: yx17c03.s1 Soares melanocyte 2NbHM Homo sapiens cDNA clone IMAGE:261988 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Insert Length: 441 Std Error: 0.00
Seq primer: -40ml3 fwd. ET from Amersham.
Location/Qualifiers
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                Location/Qualifiers
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with a modified polylinker; 1st strand cDNA was prepared
from normal prostate bulk tissue, and was then primed with
a Not I - oligo(dT) primer. Double-stranded cDNA was
ligated to Eco RI adaptors (Pharmacia), digested with Not
I and cloned into the Not I and Eco RI sites of the
modified pT7T3 vector. Library is normalized, and was
constructed by Bento Scares and M. Fatima Bonaldo. "
a 83 c 87 g 94 t
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/db_xref="taxon:9606"
/clone="IMAGE:1101585"
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/lab_host="DH10B"
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/sex="male"
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Pred. No. 3.7e-1
0; Mismatches .
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io. 3.7e-11;
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AI367864/c
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                                                                                                                                                                                                                                        Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nlh.gov
This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 760 Std Error: 0.00
Seq primer: -40Up from Glbco
Seq primer: -40Up from Glbco
                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi. Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 405)

NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI367864 405 bp mRNA qq45f09 x1 Soares_total_fetus_Nb2HF8_9w IMAGE:1935497 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                             Tumor Gene Index
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/clone_lib="Soares_total_fetus_Nb2HF8_9w"/dev_stage="8-9 weeks"
                                                                                                                                                    /db_xref="taxon:9606"
/clone="IMAGE:1935497"
                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             double-stranded cDNA was size selected, ligated to Eco RI adapters (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of a modified pT7T3 vector (Pharmacia). Library constructed by Bento Soares and M. Fatima Bonaldo. RNA from normal foreskin melanocytes (FS374) was kindly provided by Dr. Anthony P. Albino." a 84 c 91 g 97 t 1 others
                                                                                                                                                                                                                             ocation/Qualifiers
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/db_xref="GDB:3871630"
/db_xref="taxon:9606"
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100.0%; Pred. No. 3.6e-1;
tive 0; Mismatches
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YZ58d04_S1_Morton Fetal Cochlea Homo sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                 Tel: 314 286 1800

Fax: 314 286 1810

Fax: 314 286 1810

Fmail: est@watson.wustl.edu

This clone is available royalty-free through LLNL; contact the

IMAGE Consortium (info@image.llnl.gov) for further information.

Seq primer: ml3 -40 forward.
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Location/Qualifiers
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                                /organism="Homo sapiens"
/db_xref="GDB:3894356"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                       /clone="IMAGE: 287239"
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GGTCACATGGATGA 181
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 425)
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G.,
Krizman,D., Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1997)
Contact: Wilson RK
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA159781.1
                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: -40M13 fwd. from Ame
High quality sequence stop: 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: est@watson.wustl.edu

Email: est@watson.wustl.edu

This clone is available royalty-free through LLNL; contact the

This clone is available royalty-free through LLNL; contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                    IMAGE Consortium (info@image.llnl.gov)
                                                                                                                                                           111
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                                                              1.6%; Score 74; DB ilarity 100.0%; Pred. No. 3. Conservative 0; Mismatches
                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:593824"
/clone_lib="Stratagene ovarian cancer (#937219)"
                                                                                                                                                                                                                                                                /lab_host="SOLR (kanamycin_resistant)"
                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                 /dev_stage="adult, 64 years"
                                                                                                                                                                                                                                                                                                   /sex="female"
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100.0%; Pred. No. 3.
tive 0; Mismatches
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                                                                 DB 10; I
3.2e-11;
hes 0;
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                                                                                              Length 425
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                                                                                                                                  Query Match
Best Local 9
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                                                GGTCACATGGATGA 148
                  99tcacatggatga 4533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High years, Source: IMAGE Consortium, LLNL Source: IMAGE Consortium, LLNL free through LLNL; contact the This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. The Theorem Length: 645 Std Error: 0.00
                                                                                                                 Similarity 100.
74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: est@watson.wustl.edu
Insert Size: 645
High quality sequence stops: 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P. and Wilson,R.

The WashU-Merck EST Project
Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 430)
Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M., Holman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H45410.1 GI:921462
EST.
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Y066a05.s1 Soares breast 3NbHBst Homo
YAGGE:182864 3', mRNA sequence.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
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102 c
                                                                                                                                                                                                                                                                                                                                                                                                            /Organism="Homo saplens"
/db_xref="GDB:3816064"
/db_xref="taxon:9606"
/clone="IMAGE:82864"
/clone=lib="Soares breast 3NbHBst"
                                                                                                                                                                                                                                                                                                                                                                  /lab_host="DH10B (ampicillin resistant)"
                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                      /sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                 1.6%;
                                                                                                                  0;
                                                                                                                               Score 74; DB 11;
Pred. No. 3.2e-11
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                                                                                                                 Mismatches
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                                                                                                               3.2e-11;
thes 0;
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                                                                                                                                            Length 430;
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Matches 73
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                                                                                                 pig.
Sus scrofa
                                                                                                                                              AW326301
18677 MARC:
AW326301
AW326301.1
                 1 (bases 1 to 312)
Fahrenkrug,S.C., Freking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,F. Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Keele,J.W.
                                                                                                                                   EST
       Design and
                                                                                        Eukaryota;
                                                                          Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG213986
RST33612
BG213986
                                                                                                                                                                                                                                                                                                                                                                       h 1.5%; Score 73; DB 11; Similarity 100.0%; Pred. No. 6.1e-11; 73; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: scain@athersys.com
High quality sequence stop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 216 431 9900
Fax: 216 361 9596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Scott J. Cain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Activation of Gene Expression
Nat. Biotechnol. 19 (5), 440 (2001) In press
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Creation of Genome-wide Protein Expression Libraries using Random
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Harrington, J.J., Sherf, B., Rundlett, S., Jackson, P.D., Perry, R., Cain, S., Dahl, T., Thornton, M., Ramachandran, R., Whittington, J., Lerner, L., Krashoc, D., McElligott, K., Clark, S., Mays, R., Smith, E., Veloso, N., Hess, J., Cothren, K., Lo, K., Offenbacher, J., Danzig, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3201 Carnegie Ave,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Athersys, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Ducar, M.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               124
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metazoa; Chordata; Craniata; Vertebrata; Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism-"Homo sapiens"
/db_xref-"taxon:9606"
/clone_lib-"Athersys RAGE Library"
/cell_line-"HT1080"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          431 bp mRNA
Athersys RAGE Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                          312 bp
2PIG Sus s
                                                                                                                                               GI:6762222
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  of two pooled tissue
                                                                                                                                                                       scrofa cDNA 5', mRNA
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normalized cDNA libraries for
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                                                                                                                                                                                                                                                                                                                                                                                                Length 431;
                                                                                                                                                                       sequence
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                                                                    Euteleostomi;
Sus.
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                                        Casas, E.,
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AW478133
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Unpublished (2
Contact: Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BACKWARD: GTTTTCCCAGTCACGACG Plate: 10 row: N column: 2 Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Single pass sequencing. Bases called and trimmed with \rho v0.980904.e. Vector identified by cross_match with the and _minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USDA, ARS, US Weat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, US
Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus. 1 (bases 1 to 399)
Fahrenkrug,S.C., Ereking,B.A., Rohrer,G.A., Smith,T.P.L., Casas,E Stone,R.T., Heaton,M.P., Grosse,W.M., Bennett,G.A., Laegreid,W.W. and Keele,J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW478133 399 bp mRt
18665 MARC 2PIG Sus scrofa
AW478133
AW478133.1 GI:7048239
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                                                                                                                           EST discovery in swine unpublished (2000)
Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, US Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                 Sus scrofa
                                                     Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and trimmed with phred
v0.980904.e. Vector identified by cross_match with the -mins
and -minmatch 12 options.
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FORWARD: AGGAAACAGCTATGACCAT BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                             Design and use of two pooled tissue normalized cDNA libraries for
                                     PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRimers
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/db_xref-"taxon:9823"
/clone_lib-"MARC 2PIG"
/tissue_type="pooled"
/lab_host-"DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-*vector: pcMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from testis, ovary, endometrium, hypothalamus, pituitary, and placenta." a 47 c 74 g 62 t
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Pred. No. 2.8e-10;
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ofa cDNA 5', mRNA
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Seq primer: ATTTAGGTGACACTATAG.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 336)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Nobert Strausberg, Ph.D.
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Nan Hu, M.D., Ph.D., Mark Roth, M.D., Phillip
Taylor, M.D., Michael R. Emmert-Buck, M.D., Ph.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
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62 c
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/clone_lib="MARC 2PIG"
/tissue_type="pooled"
/lab_host="DH10B"
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Library made from pooled tissue from testis, ovary,
endometrium, hypothalamus, pituitary, and placenta."
62 c 89 g 77 t
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                                                                /tissue_type="squamous cell carcinoma"
/lab_host="DH10B"
/lab_host="DH10B"
/note="Organ: esophagus; Vector; pCMV-SPORT6; Site_1; Sall
/note="organ: esophagus; Vector; pCMV-SPORT6; Site_1; Site_2; NotI; Cloned unidirectionally. Primer: Oligo
site_2; NotI; Cloned unidirectionally. Primer: Oligo
dT. Average insert size 1.1 kb. Life Technologies catalog
                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2580332"
/clone_lib="NCI_CGAP_Eso2"
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71 c
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                    64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov

Tissue Procurement: CLONTECH Laboratories, Inc.
cDNA Library Preparation: CLONTECH Laboratories, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (Linl)

DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleosto Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 609)
NIH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MCC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLCM1515 row: m column: 08
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                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        quality sequence stop: 564.
Location/Qualifiers
                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4693423"
/clone=lib="NHH_MCC_77"
/lab_host="DH10B (TI phage-resistant)"
/note="forgan: lung; Vector: pDNR-LIB (Clontech); Site_1:
/sfil (ggccgctstoggcc); Site_2: Sfil (ggccattatggcc); 5' and
3' adaptors were used in cloning as follows: 5' adaptor
sequence: 5'-CACGGCCATTATGGCC-3' and 3' adaptor sequence:
5'-ATTCAGAGCCGAGCGATG-dT(30)BN-3' (where B = A,
C, or G and N = A, C, G, or T). Average insert size 1.9
kb (range 0.5-4.0 kb). 12/15 colonies contained inserts
by PCR. This library was enriched for full-length clones
and was constructed by Clontech Laboratories (Palo Alto,
CA). Note: this is a NIH_MGC Library."
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                                                                                                       1.4%; Score 64;
100.0%; Pred. No.
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100.0%; Pred. No.
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                                                                                      1.5e-08;
hes 0;
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1.8e-09;
hes 0;
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                                                 Homo sapiens
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                                                                                                                                  mRNA sequence.
BF791134
                                                                                                                                                         BF791134 515 bp mRNA EST 12-JAN-2001 602251225F1 NIH_MGC_81 Homo sapiens cDNA clone IMAGE:4338342 5',
      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                          BF791134.1 GI:12096188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: liewcc@utcc.utoronto.ca
Seq primer: GGTGGCGACGACTCCTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fax: 4169785650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 4169788758
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Department of Laborate University of Toronto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Liew CC
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96163883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hwang,D.M., Fung,Y.W., Wang,R.X., Laurenssen,C.M., Ng,S.H., Lam,W.Y., Tsui,K.W., Fung,K.P., Waye,M., Lee,C.Y. and Liew,C.C. nalysis of expressed sequence tags from a fetal human heart cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Fetal heart Homo
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/lab_host="E. coll y1090"
/lab_host="E. coll y1090"
/note="Vector: Lambda gt22; Site_1: Not1; Site_2: Sal1;
/note="Vector: Lambda gt22; Site_1: Not1; Site_2: Sal1;
/nNA was purified from human fetal hearts (10-12 weeks).
cDNA was constructed using a Not1-Oligo dT adaptor-primer.
Sal1 adaptors were ligated, followed by digestion with
Not1, for direction cloning into predigested lambda gt22.
Method is described in J. Mol. Cell. Cardiol. (1994) 26,
1329-1333)"
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/db_xref="taxon:9606"
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    Chordata;
Primates;
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Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nlh.gov
Tissue Procurement: CLONETECH Laboratories, Inc.
cDNA Library Preparation: CLONETECH Laboratories, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61;
Contact: Robert Strausberg, Ph.D.

Email: cgapbs r@mall.nih.gov

Tissue Procurement: ATCC

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incytte Genomics, Inc.

Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 803)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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602277187F2 NIH_MGC_86 Homo
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                                                                                                                                                                  Unpublished (1999)
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92 g 153 t
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/clone_lb="NNH_MGC_81"
/lab_host="DH10B (T1 phage-resistant)"
/note="Organ: muscle (skeletal); Vector: pDNR-LIB
(Clontech); Site_1: SfiI (ggccgcctcggcc); Site_2: SfiI
(ggccattatggcc); 5' and 3' adaptors were used in cloning
(ggccattatggcc); 5' adaptor sequence: 5'-CACGGCCATTATGGCC-3'
as follows: 5' adaptor sequence: 5'-CACGGCCATTATGGCC-3'
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/db_xref="taxon:9606"
/clone="IMAGE:4338342"
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5'-ATTCTAGAGGCCGAGGCCGACATG-dT(30)BN-3' (where B - A)
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RST22849 Athersys RAGE Library Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                           Creation of Genome-wide Protein Expression Libraries Activation of Gene Expression Nat. Biotechnol. 19 (5), 440 (2001) In press
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 279)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                          Tel: 216 431 9900
Fax: 216 361 9596
                                                                                                                                                                                                                                                                                                                                                                                         Athersys, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Scott J. Cain
                                                                                                                                                                                                                                                                                                                                                                   3201 Carnegie Ave,
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                                                                                                                                                                                                                                                                                 quality sequence stop: 267.
                                                                                                                                                                                                                                                                                                           scain@athersys.com
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/lab_host="PH10B (phage=resistant)"
/note="organ: bone; Vector: pcMv-SpORT6; Site_1: Not1;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.33 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC_Library."
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/db_xref="taxon:9606"
/clone="IMAGE:4365116"
/clone_lib="NIH_MGC_86"
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               Libraries using Random Activation of Gene Expression, Nature Biotechnology, in press. Note that even though the cell type indicated is HT1080, since a random activation method was used, these sequence tags are not necessarily expressed in HT1080 under normal circumstances.
                                                                                                                                     /clone_lib="Athersys RAGE Library"
/cell_line="HT1080"
/note="See 'Creation of Genome-wide Protein Expression
                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
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RESULT 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA Library Preparation: M. Bento Soares, Ph.D. cDNA Library Arraying: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Sec Clone distribution: NCI-GGAP Clone distribution inf found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 529 Std Error: 0.00
Seq primer: -40ml3 fwd. ET from Amersham
High quality sequence stop: 395.
Location/Qualiflers
                        AV694918
AV694918
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1 (bases 1 to 421)

NCI-CGAP http://www.ncbi.nlm.nih.gov/nclcgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
Tumor Gene Index
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
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ne26c06.s1 NCI_CGAP_Co3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:898474"
/clone_lib="NCI_CGAP_Co3"
/sex="pooled"
                                                                                                                                                                                                                                                                                                                                                                                                         /lab_host="DHIOB"
//lab_host="DHIOB"
//lab_host="PhIOB"
//lab_host="Ph
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96 c
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              sapiens cDNA clone GKCCZB10
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0; Mismatches
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thes 0;
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Best Local S
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AV692878
AV692878
                                                                     Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
201203, P. R. China
Tel: 86-21-50801919(ex.45)
Fax: 86-21-50801922
                                               Email: hanzg@chgc.sh.cn
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47; Conserv
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Chinese National Human Genome Center at Shanghai
51 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
201203, P. R. China
Tel: 86-21-50801919(ex.45)
Fax: 86-21-50801922
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: hanzg@chgc.sh.cn
This clone is available at CHGC
Location/Qualifiers
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Unpublished (2000)
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AV694918.1
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clone is available at CHGC
Location/Qualifiers
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GKC Homo sapiens
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/dev_stage="Adult"
/lab_host="SOLR"
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/db_xref="taxon:9606"
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Qu,J., Song,H., Cheng,Z., Zeng,L.,
G., Ren,S., Zhong,M., Lu,G., Yang
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                                 139
                                                                                             Local Similarity 100.0%; hes 47; Conservative
                            WL,T., Qian,B., Huang,Q., Huang,C., Kang,B., Gao,X., Xu,Z., Xiao,Xu,X., Li,N., Peng,Y., Liu,F., Qu,J., Song,H., Cheng,Z., Zeng,Xu,X., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong,M., Lu,G., Yan,Y., Gu,Y., Chen,Z. and Han,Z.

Homo sapiens cDNA GK- clones

Homo sapiens cDNA GK- c
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1 (bases 1 to 754)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: hanzg@chgc.sh.cn
This clone is available at CHGC
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/clone_lib="GKC"
/tissue_type="hepatocellular carcinoma"
/dev_stage="Adult"
/lab_host="SOLR"
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/tissue_type-"hepatocellular carcinoma"
/dev_stage-"Adult"
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/db_xref="taxon:9606"
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BG253578
LOCUS
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ORIGIN
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High Throughput Sequencing
University of Washington
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47; Conservative 0;
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Tel: (206) 616-3618
Fax: (206) 616-3887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                     Eukaryota; Metazoa; Chordata; Cr
Mammalia; Eutheria; Primates; Ca
1 (bases 1 to 883)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, M
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Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                   mRNA sequence.
BG253578
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602364324F1 NIH_MGC_90
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Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.

5,

Mammalian

Gene Collection (MGC)

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HS_3100_B2_H11_T7C CIT Approved Human Genomic Sperm Library D Homo sapiens genomic clone Plate=3100 Col=22 Row=P, DNA sequence.
AQ893428
                                                                                                                                                                                                                                                                                                                                                                                         Email: jwallace@u.washington.edu
Clones may be purchased from Research Genetics
BAC end Web Server: http://www.htsc.washington.
Plate: 3100 row: P column: 22
Seq primer: T7
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 828)
Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T., Keller,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D. a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               scanning the human genome proc. Natl. Acad. Sci. U. S. A. 96 (17), 9739-9744 (1999)
                                                                                                                                                                                                                                                                                                                                             High quality sequence stop: 828
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence-tagged connectors: A sequence
                                                                                                                                                          /note="Organ: sperm; Vector: pBeloBAC11; BAC Clones in E-Coli DH10B"
                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="plate=3100 Col=22 Row=P"
/clone_lib="CIT Approved Human Genomic Sperm Library D"
Score 47; DB; Pred. No. 0.0
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ncing Center
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                                                                                                                                                                                                                                                                Plate: LLAM10234 row: m column: High quality sequence stop: 722.
                                                                                                                                                                                                                                                                                                                     DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                http://image.llnl.gov
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BG121584
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Plate: LLAM10293 row: p column: 05
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cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
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llarity 100.0%; Pred. No.
Conservative 0; Mismatc
/Glone="Ith-WAGE:4449967"
/Glone=lib="NIH_MGC_90"
/Clone=lib="NIH_MGC_90"
/Clone=lib="NIH_MGC_90"
/Clone=lib="NIH_MGC_90"
/Clone=""Ordenocarcinoma, cell line"
/Inb.host="DHIO9 (phage-resistant)"
/Inb.host=""DHIO9 (phage-resistant)"
/Inote="Organ: liver; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; Oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
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                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
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/lab_host="DHIOB (phage resistant)"
/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."

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Eutheria; Primates; Catarrhini; Hominidae; Homo.
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/db_xref="taxon:9606"
/clone="IMAGE:4472692"
/clone_lib="NIH_MCC_90"
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RESULT 33
AA680196/c
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BG192713
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Best Local
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AA680196 171 bp mRNA ES ac82b04.s1 Stratagene lung (#937210) Homo IMAGE: 869071 3', mRNA sequence. AA680196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: scain@athersys.com
High quality sequence stop: Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3201 Carnegie Ave, Cleveland, OH 44115, USA
Tel: 216 431 9900
Fax: 216 361 9596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Athersys, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Activation of Gene Expression Nat. Biotechnol. 19 (5), 440 (2001) In press
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Creation of Genome-wide Protein Expression Libraries using Random
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Harrington, J.J., Sherf, B., Rundlett, S., Jackson, P.D., Perry, R., Cain, S., Dahl, T., Thornton, M., Ramachandran, R., Whittington, J., Lerner, L., Krashoc, D., McElligott, K., Clark, S., Mays, R., Smith, E Veloso, N., Hess, J., Cothren, K., Lo, K., Offenbacher, J., Danzig, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and Ducar, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Scott J. Cain
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RST11830 Athersys RAGE Library Homo sapiens cDNA,
BG192713
BG192713.1 GI:13714400
EST.
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/Cell_line="HF1080"
/note="See 'Creation of Genome-wide Protein Expression
Libraries using Random Activation of Gene Expression',
Nature Biotechnology, in press. Note that even though the
cell type indicated is HF1080, since a random activation
method was used, these sequence tags are not necessarily
expressed in HF1080 under normal circumstances."

82 c 57 g 59 t 2 others
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/db_xref="taxon:9606"
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Note: this is a NIH_MGC Library."
139 c 247 g 213 t
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b; Pred. No. 0.0
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Pred. No.
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0.0006;
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MEDLINE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -40ml3 fwd. ET from Amersham
High quality sequence stop: 159.
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EST.
                                                                                                  Eukaryois; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 354)

Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Ragai,M.A., da Silva,W. Jr., 2ago,M.A., Bordin,S., Costa,F.F., Ragai,M.A., da Silva,W. Jr., 2ago,M.A., Bala,G.S., Simpson,D.H., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Bala,G.S., Simpson,D.H., Brunstein,A., deOliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                             BF880177 354 bp mRNA
CM2-ET0127-291100-524-a06 ET0
BF880177
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                   sequence tags
                                                                     Shotgun sequencing of the human transcriptome with ORF expressed
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:869071"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Stratagene lung (#937210)"
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Pred. No.
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BG436063
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=CM2&t2=CM2-ET0127-
291100-524-a06&t3=2000-11-29&t4=1)
Seg primer: puc l8 forward
High quality sequence start: 21
High quality sequence stop: 350.
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Ludwig Institute for Cancer R
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                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
1 (bases 1 to 666)
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EST.
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National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
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                                                                                                          found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLCM1379 row: c column: 13
                                                                                                                                                                                                                                                       Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH Laboratories, Inc
                                                                                                                                                                                                                                                                                         Contact: Robert Strausberg, Ph.D
                                                                                                                                                                                                                                                                                                            Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG436063
                                                                                                                                                                       CDNA Library Preparation: CLONTECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
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                                                                                             quality sequence stop:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:
/organism="Homo sapiens
/db_xref="taxon:9606"
/clone="IMAGE:4619460"
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100.0%; Pr
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Primates;
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Pred. No.
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Catarrhini;
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0.059;
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1; Hominidae; Homo.
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Best Local Similarity
Matches 41; Conserv
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                                                                                                                                                                                                                                                                                                                                   Email: asimpsoneludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=st2=MRO-HT0407-130
400-014-h10st3=2000-04-13st4=1)
Seq primer: puc 18 forward
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                                                                                                                                                                                                                                                                                       High quality sequence stop: 256.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Simpson A.J.G
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MRO-HT0407-130400-014-h10 HT0407
BE159629
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/note="Organ: placenta; Vector: pDNR-LIB (Clontech);
Site_1: Sfit (ggccgcteggce); Site_2: Sfit (ggccattatggcc);
Site_1: Sfit (ggccgcteggce); Site_2: Sfit (ggccattatggcc);
S' and 3' adaptors were used in cloning as follows: 5'
adaptor sequence: 5'-CACGGCCATTATGGCC-3' and 3' adaptor
sequence: 5'-ATTCTAGAGGCCGAGGGGGGCGACATG-dT(3))BN-3'
(where B = A, C, or G and N = A, C, G, or T). Average
insert size 1.3 kb (range 0.5-4.0 kb). 15/15 colonies
contained inserts by PCR. This library was enriched for
full-length clones and was constructed by Clontech
Laboratories (Palo Alto, CA). Note: this is a NIH_MGC
1.thrary "1
     /note-*Organ: head_neck; Vector: puc18; Site_1: SmaI; Site_2: SmaI, A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under
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/db_xref="taxon:9606"
                                                                                                                                                                /dev_stage="Adult"
                                                                                                                                                                                        /clone_lib="HT0407"
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h 106 c
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1 to 256)

E., García Correa, R., Verjovski-Almeida, S., Briones, M.R.,
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cDNA amplification were performed under
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REFERENCE

AUTHORS

RESULT 3 BE159629 LOCUS

**KEYWORDS** VERSION 밁 Ş

FEATURES

COMMENT

JOURNAL MEDLINE TITLE

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                                                                                                                                                                                  4460 gacagacagcaccaagaagtaattgcaatttatcggac 4497
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                                             BE165985 226 bp mRNA
MR3-HT0487-150200-114-c06 HT0487
BE165985
BE165985.1 GI:8628706
                                   EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2001)
Contact: Swarcop, A.
Department of Ophthalmology and Visual Sciences
Rellogg Eye Center, University of Michigan
S40 KEC, 1000 Wall St., Ann Arbor, MI 48105, USJ
Tel: 734 615 2246
Fax: 734 647 0228
                                                                                                                                                                                                                                                                                                                                                                                                                                          FORWARD: 5' Triplex - ctcgggaagcgcgccattgtgttggt
BACKWARD: 3' Triplex - atacgactcactatagggcgaattggcc
Seq primer: 5' Triplex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCR PRimers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Towards an expression profile of the native adult human retinal pigment epithelium: Identification of a non-redundant set of 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Buraczynska, M., Mears, A.J., Filippova, E., Yuan, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 383)
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ilarity 100.0%;
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llarity 100.0%;
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                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone_lip="Human Retinal Pigment Epithelium cDNA"
/tissue_type="Retinal Pigment Epithelium sheets"
/note="Organ: Retina; Vector: Lambda-TriplEX2"
91 c 89 g 96 t
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35 c 64 g 60 t
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0.38;
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0.51;
                                                                        sapiens cDNA, mRNA
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                                                                                                                                                                                                                  ORGANISM
                                                                                                                            AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 226)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R.,
Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F.,
Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Simpson,D.H.,
Brunstein,A., deOliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare
,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq primer: puc 18 forward
High quality sequence stop: 226.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2-MR3-HT0487-150
200-114-c06&t3=2000-02-15&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: +55-11-2704922
Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20202663
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Simpson, A.J.
                    za67b05.s1 Soares_fetal_lung_NbHL19W Homo sapiens IMAGE:297585 3', mRNA sequence.
               The WashU-Merck EST Unpublished (1995)
                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-"Organ: head_neck; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORSSTES PCR (U.S. Letters Patent application No. 196.716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
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Eutheria; Primates; Catarrhini; Hominidae; Homo.
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/dev_stage="Adult"
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/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                418 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.8%; Score 37;
100.0%; Pred. No.
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: ml3 -40 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                             N27231 425 bp mRNA yx17c03.r1 Soares melanocyte 2NbHM IMAGE:261988 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                           N27231
N27231.1 GI:1141579
EST.
High quality sequence stops: 171 source: IMAGE Consortium, LINL This clone is available royalty-free through LINL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Insert Length: 1068 Std Error: 0.00
                                                                                Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. I Tel: 314 286 1810
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                       ,M., Hultman,M., Kucaba,T., Le,M., Lennon,G., Marra,M., Parsons,J
Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Watersto,R., Williamson,A., Wohldmann,P. and Wilson,R.
                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 425)
Hillier, L., Clark, N., Dubuque, T., Elliston, K., Hawkins, M., Holman
                                                                                                                                                                     Unpublished (1995)
Contact: Wilson RK
                                                                                                                                                                                                         The WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                 human.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Soares_fetal_lung_NbHL19W"
/dev_stage="19 weeks"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="IMAGE:297585"
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0.67;
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTTGAGAGAAAGGAAGAAGAAAGCCAAAACAAAA 143
                                                                                                                                                            Email: asimpsoneludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=MR3&t2=MR3-HT0487-
290100-104-f12&t3=2000-01-29&t4=1)
Seq primer: puc 18 forward
Seq primer: puc 18 forward
                                                                                                                                                                                                                                                                                                                           Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AW607658 426 bp mrNA EST 23-MAR-2000
MR3-HT0487-290100-104-f12 HT0487 Homo sapiens cDNA, mrNA sequence.
AW607658
                                                                                                                                                     High quality sequence stop: 426.
                                                                                                                                                                                                                                                                                                                                                                             HCGP http://www.ludw1g.org.br/ORESTES.
The FAPESP/LICR Human Cancer Genome Project
Unpublished (1999)
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EST.
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Mammalia; [
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High quality sequence stop: 171.
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                                                                                                                                                                                                                                                                    +55-11-2704922
+55-11-2707001
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Site_2: SmaI; A mini-library was made by cloning products
derived from ORESTES PCR (U.S. Letters Patent application
                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                       /dev_stage="Adult"
                                                                         /clone_lib-"HT0487"
                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/clone="IMAGE:261988"
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/lab_host="DH10B (ampicil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="Soares melanocyte 2NbHM"
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Matches 37
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                                                                                                                                                                                                                                                                                                                          Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2=RC6-HT0594-180 Seq primer: puc 18 forward High quality segments.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 435)

Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Najai, M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Bala,G.S., Simpson,D.H., Brunstein,A., deOliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Simpson A.J.G.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Simpson, A.J.
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                   172
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      /note-*Organ: head_neck; Vector: pucl8; Site_1: SmaI; Site_2: SmaI, A mini-library was made by cloning products derived from ORSSTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
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/clone_lib="HT0594"
/dev_stage="Adult"
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Query Match Best Local Similarity

0.8%;

Score 37; Pred. No.

DB 10; 0.65;

Length 435;

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RESULT 4
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DKFZp313F0932_r1 313 (s
DKFZp313F0932 5', mRNA
AL600140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      This clone (DKFZp313F0932) is available at the RZPD in please contact the RZPD: Ressourcenzentrum, Heubnerweg Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This is the 5' sequence of the clone insert Clone from S. Wiemann, Molecular Genme Analysis, German Cancer Clone from S. Wiemann, Molecular Genme Analysis, German Cancer Research Center (DKFZ); Email s.wiemann@dkfz- heidelberg.de; sequenced by GBF (National Research Centre for Biotechnology Ltd., Braunschweig/Germany) within the cDNA sequencing consortium of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; 1 (bases 1 to 463)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          German Genome Project.
No s1 sequence available.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Bloecker H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wiemann, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST (Bloecker, H., Boecher, M., Brandt, P., Mewes, H.W., Weil, B. and
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Homo sapiens
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                  AA197064.1
                                                                                          zp09c02.rl Stratagene
IMAGE:608930 5', mRNA
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cDNA-collection"
64 c 111 g 97 t
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/clone_lib="313 (synonym:
/dev_stage="adult"
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/db_xref="taxon:9606"
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  Chordata;
Primates;
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  Craniata; Vertebrata;
Catarrhini; Hominidae;
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0.62;
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    Hominidae;
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                Euteleostomi;
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97044478
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Hillier, L., Lennon, G., Becker, M., Bonaldo, M.F., Chiapelli, B., Chissoe, S., Dietrich, N., DuBuque, T., Favello, A., Gish, W., Hawkins Chissoe, S., Dietrich, N., DuBuque, T., Favello, A., Gish, W., Mardis, E., Moore, M., Hultman, M., Kucaba, T., Lacy, M., Le, N., Le, N., Mardis, E., Moore, B., Morris, M., Parsons, J., Prange, C., Rifkin, L., Rohlfing, T., B., Morris, M., Parsons, J., Pan, F., Thierry-Meg, J., Trevaskis, E., Schellenberg, K., Soares, M.B., Tan, F., Thierry-Meg, J., Trevaskis, E., Underwood, K., Wohldmann, P., Waterston, R., Wilson, R. and Marra, M. Generation and analysis of 280,000 human expressed sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: 314 286 1800 Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Seq primer: -28Ml3 rev2 from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington University Scho
4444 Forest Park Parkway,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             602364366F1 NIH_MGC_90 Homo sapiens cDNA clone IMAGE:4472416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: est@watson.wustl.edu
found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAM10293 row: d column: 17
                                                                                                                                                                     Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                    Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                     Mammalia; Eutheria; Primates; Catarrhini;
1 (bases 1 to 714)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Eukaryota; Metazoa;
                                                                        CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Tncyte Genomics, Inc. Clone distribution: MGC clone distribution information can
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/db_xref="GDB:4624189"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="IMAGE:608930"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /sex="mixed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="Stratagene fetal retina 937202"
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Primates;
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Pred. No.
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                                                                                                                                                                                                                                                                             Gene Collection (MGC)
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High quality sequence stop: 713.
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Location/Qualifiers
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/db_xref="taxon:9406"
/db_xref="taxon:9406"
/clone="IMSE:4472416"
/clone="IMSE:4472416"
/clone="IMSE:472416"
/c
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Title:
Perfect score:
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4730
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23480.244 Million cell updates/sec
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

RESULT 1 AF322916 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL PUBMED REFERENCE AUTHORS		0 0 0 4 4 4 4 1 5 4 4 3	000	3 G G 4	- 66 6	30 31	26 27 28	0, 0.	210				8760	1 & W & P	Result No. Sco
AF322916 4428 Homo sapiens uveal AF322916.1 GI:122 human. Homo sapiens Eukaryota; Metazoz Mammalia; Eutheria 1 (bases 1 to 44) Yamadda, K., Senju, Se		0.5 179813 0.5 184556 0.5 185954 0.5 189963 0.5 207050	0.5 176126 0.5 176307 0.5 179714	0.5 168654 0.5 170740	0.5 160271	0.5 156864	0.5 146842 0.5 147418 0.5 153665	0.5 105466 0.5 113539 0.5 127999	0.5 40634 0.5 91552	0.7 83775 0.6 83775 0.6 1717 0.5 2703	0.7 1628 0.7 250 0.7 421 0.7 421	0.8 418 0.7 441	1.0 172850 1.0 4643 0.8 371	1.6 4428 1.6 4429 1.6 5520 1.6 5520 1.3 148041	Query re Match Length D
8 bp mRNA PRI 15-FEB-2001 al autoantigen mRNA, complete cds.  2240160  2240160  coa; Chordata; Craniata; Vertebrata; Euteleostomi; ia; Primates; Catarrhini; Hominidae; Homo. 428) 4,S., Nakatsura,T., Murata,Y., Ishihara,M., so,S., Negl.A. and Nishimura,Y. fa novel autoantigen UACA in patients with s. Res. Commun. 280 (4), 1169-1176 (2001) 1,S. and Nishimura,Y.	ALIGNMENTS	2 AC012339 2 AC092929 2 AC021975 2 AC023376 2 AC079013	AC0682 AC0157 AC0242	AC06487 HSBA801 AC0116	AC01619 AC09013 AC02423	AC01683	AC00799 AC09264 AL35974	AL35628 AL35368 AF16513	AC00530 AC00860	2 AC022466 2 AC022466 9 AB002533 4 BOVPS	9 AK000990 11 G14728 6 AX192628 6 AX193058	11 G36947 6 AX193084	4 CFC3VS 4 CFC3VS 5 AXO71367	9 AF322916 4 AF322915 9 AC087699 3 AC010076	B ID
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                                   1 (bases 1 to 4429)
Yamada,K., Senju,S., Nakatsura,T., Murata,Y., Ishihara,M.,
Nakamura,S., Ohno,S., Negi.A. and Nishimura,Y.
Identification of a novel autoantigen UACA in patients with
                                                                                                                                                                                                 Bos taurus
                                                                                                                                                                                                                                                                                      BOS taurus uveal autoantigen mRNA, complete AF322915
                               pantiveitis
                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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                                                                                                                                   Bovidae; Bovinae;
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TFCESAKQBRIKLQNELAHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYE
SEGKVKQMQTHFLALKEHLTSEAASGNHRLTEELKDQLKDLKVYYEGAGAEVGKLRNQ
IKQNEMIVEEFKNBEGKLIEENKRLQKELSMCEMEREKKGKKVTEMEGQAKELSKLA
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LETVFVPPEKHEKEITALKSNIVELKKOLSELKKKGEDQEKHHLTSENTNLKKMMS
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ELDTIGECIKVKYAPIVSFEECERKFKATEKELKDQLSEOTOKYSVSEEEVKKNKQEN
DKLKKEIFTLQKDLRDKTVLIEKSHEMERALSKTDELNKQLKDLSOKYTEVKNVKEK
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QTVTKLHOLLENGKNSSVPLAEHLQIKEAFKENGIITASLREKEEESSONKMEEVSKL
LVERNAKGTSSILAVQNLLOKOHVPLEQVEALKKSLNGTIENLKEELKSMQRCYEKEQ
QTVTKLHOLLENGKNSSVPLAEHLQIKEAFKENGIITASLREKEEESSONKMEEVSKL
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HAKKKEISAKDEKELLHFSIEQEIKDQKERCDKSLTTIELQRRIQESAKOIEAKDNK
ITELLANVERLKQALNCLSQLTYTSGNPTKRQSQLIDTLQHQVKSLEQQLADADRQHQ
EVIAIYRTHLLSAAQGHMDEDVQEALLQIIQNRQGLVC"
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                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
Nagase.T., Kikuno,R., Nakayama,M., Hirosawa,M. and Ohara,O.
Prediction of the coding sequences of unidentified human genes.
                                                                                                                                                Homo sapiens
                                                                                                                                                                Homo sapiens cDNA to mRNA, clone:fh20178
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VAYADDLESERKKKSLLAAKEKOHEESLRTIEDLKNIRKYKFESDHLGSGSHFSNRKE
DMLLKOGOMYMADSOCTSPGIED PAHMOSSRMLRDLEISLPSOTSY SENEILKKELEAMR
TFCESAKODRLKLONELAHKVARCKALALECERVKEDSDEOIKOLEDALKDVOKRMYE
SEGKVKOMOTHFLALKEHLTSEAASGNIRLTEELKOLLDLKYVKYEGASAEVGKLRNO
LKONEMIV VEEKREDGKLIENENRLOKRELSMEMBEREKKGRKVTEMEGOAKELSAKLA
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KYPENKOKSSLSOKKITTELTLKNOPLOKEIEKVYLDNKLLKEOAHHLTIEM
KNHYVPLKVSEDMKKSHDAILDDLNRKLLDVTOKYTEKKLEMEKLLLENDSLSKDVSR
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LETVFVPPEKHEKEIIALSSILSSOMRKVODISNAEILANYRKGDEOIVTLHAEIKAOKK
ELDTIQECIKVKYAPIVSFEECERKFRATEKELLDVTOKYTEKKLEMEKLLLENDSLSKDVSR
KELDTIQECIKVKYAPIVSFEECERKFRATEKELKDOLSGOTOKYSVSEEVKKKNOEN
DKIKKEIFTLOKOLROKTVLLEKSHDMERALGRKTDELHKOLSOKYTEVKNVKEK
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GDVEKYTSILAKKGVNPGKLDVEGRSVFHVVTSKGNLECLNAILIHGVDITTSDTAGR
NALHLAAKYGHALCLOKLLQYNCPTEHADLQGRTALQKKAMADCPSSIQLLCDHGASV
NAKDVKGRTPLVLATQMSRPTICQLLIDRGADVNSRDKQNRTALMLGCEYGCRDAVEV
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/protein_id="AAG49576.1"
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Ohara,O., Nagase,T. and Kikuno,R.
                                                                                 SEQUENCE, 3 unordered pieces. AC087699
                                                                                                                                                                           AC087699 148041 bp DNA HTG 09-MAY-2001
Homo sapiens chromosome 15 clone RP11-64K10 map 15, WORKING DRAFT
ACO87699.2 GI:13194380
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
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MEREKKGRK VTEMEGQAK ELSAKLALSI PAEK PENMKSSLSNEVNEKARKLVEMEREH
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KTDELMKOLKDIS OKYTEVKNOKEKLV EEDAKOTSELIAVONLLOKOHVPLEQVEALK
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Pred. No.
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8e-27;
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O'Connor, T., O'Donnell, P., O'Neil, D., Oliver J., Peterson, K.,
Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Retta, R.,
Ribback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M.,
Ribback, M., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P.,
Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P.,
Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N.,
Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J.,
Travers, M., Travis, N., Trigillo, J., Vassillev, H., Viel, R., Vo, A.,
Wilson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J.,
Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dodge, S., Faro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (15-JAN-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Mar 3, 2001 this sequence version replaced gi:12229508.

All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barna, N., Bastien, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Choepel, Y., Colangelo, M., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Cooke, P., Dehrallano, K., Dewar, K., Diaz, J.S., Cooke, P., Dehrallano, K., Dewar, Collymore, Collym
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Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 15, clone RP11-64K10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
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                                                                                                                                                                                                                                                                                                                                                   NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pleces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site: http://www-seq.wi.mit.edu
Contact: sequence_submissions@genome.wi.mit.edu
------Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chemistry: Dye-terminator Big Dye: 100% of reads Assembly program: Phrap: version 0.960731 Consensus quality: 146524 bases at least 040 Consensus quality: 147238 bases at least 030 Consensus quality: 147647 bases at least 020 Consensus quality: 147647 bases at least 020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: L5158
Center clone name: 64_K_10
Center clone name: 64_K_10
Center clone name: 64_K_10
Center clone summary Statistics
Sequencing vector: Plasmid; n/a; 100% of reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Insert size: 149000; agarose-fp
Insert size: 147841; sum-of-contigs
Quality coverage: 10.3 in Q20 bases; agarose-fp
Quality coverage: 10.4 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center: Whitehead Institute/ MIT Center for Genome Research
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                                                                                                                                                                                                                1 18338: contig of 18338 bp in length 18339 18438: gap of 100 bp 18439 68773: contig of 70335 bp in length
                                                                                                                                                     88774 88873: gap of 100 bp 88874 148041: contig of 59168
                                                                                                        Location/Qualifiers
                      /organism="Homo sapiens'
                                                                   . 148041
                                                                                                                                                     bp in length
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Severy, P.,

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TITLE
JOURNAL
REFERENCE
AUTHORS
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AUTHORS
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ORGANISM
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VERSION
KEYWORDS
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AC010076/c
LOCUS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
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ORIGIN
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Best Local S
Matches 61
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 Sequence Quality Assessment: This entry has been annotat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4520
                                                                                                                                                                                                                                                            Submitted (11-SEP-1999) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA On Sep 1, 2000 this sequence version replaced gi:8312412.
                                                                                                                                                                                                                                                                                                                                                 Rowen,L., Madan,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Blcom,S., Dors,M., Dickhoff,R., Harrison,G., James,R., Lasky,S., Madan,A., Ratcliffe,A., Shaffer,T. and Hood,L.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Dors,M., Dickhoff,R., Fleetwood,P., Harrison,G., Kaur,A., Madan,A., Nesbitt,R., Traicoff,R. and Hood,L. Sequencing of human chromosome 15 D15S114-D15S115 region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens chromosome 15 clone SEQUENCE, 19 ordered pieces. AC010076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rowen, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 155760)
                                                Sequencing vector: pUC18; L08752
Chemistry: Dye-terminator Big Dye; 90% of reads
Chemistry: Dye-primer Big Dye; 10% of reads
Assembly program: Phrap; version 0.990399
Insert size: 150000; agarose-fp
Quality coverage: 4.6x in Q20 bases; sum-of-contigs
                                                                                                                                                            Web site: http://chroma.mbt.washington.edu/msg_www.Contact: leerowen@systemsbiology.org
Summary Statistics
                                                                                                                                                                                                                         Center: Multimegabase Sequencing Center Center code: UWMSC
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ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                         Submission
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/note="assembly_fragment
clone_end:T7
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| 31940 c 30523 g 41094 t
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/clone_lib="RPCI-11 Human Male BAC"
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/chromosome="15"
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annotated with sequence quality
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5.7e-20;
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RP11-64K10, WORKING DRAFT
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                        Query Match
Best Local
         Matches
                                                                                                                                                                                                  source
                       Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence. It currently consists of 19 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality levels above 40 are expected to have less 1 error in 10,000 bp.
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                                                                                                                                                              1. .155760
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                              /clone="RP11-64K10"
/clone_lib="RPCI human BAC library 11"
33275 c 32273 g 42185 t 2267 others
                                                                                                                                                  /chromosome="15"
                                                                                                                                                                                                                Location/Qualifiers
 1.3%; Score 61; DB 2; Le
100.0%; Pred. No. 5.7e-20;
                                                                                                                                                                                                                                                                      129210: gap of unknown 1
133029: contig of 3819 b
133129: gap of unknown 1
139765: contig of 6636 b
139865: gap of unknown 1
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155760: contig of 14164
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19368: contig of 39368 bp in length
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Direct Submission

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11 Levin, N., Bastien, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Conker, D., Chang, J., Choepel, Y., Colangelo, M., Collins, S., Colarles Street, Cambridge, MA 02141, USA

11 Law, R., Bastien, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Graham, L., Graham, L., Graham, L., Graham, L., Graham, L., Graham, L., Graham, J., Ghere, P., Dehrellano, K., Dewar, K., Graham, K., Hulne, W., Graham, L., Graham, L., Labocque, K., Lamazares, R., Ladders, T., Lehoczky, J., Levine, R., Liu, G., McCarthy, M., McCarthy, M.
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                                                                                                                         Submitted (24-MAR 2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Mar 4, 2001 this sequence version replaced gi:12745100. All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                       http://ftp.genome.washington.edu/RM/RepeatMasker.html
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                                          Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
Contact: sequence_submissions@genome.wi.mit.edu
                          Web site: http://www-seq.wi.mit.edu
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complement(808. .1100)
/rpt_family="AluSx"
1899. .217a
                                                                                                                                                                                                                                       /rpt_family="AluSg"
complement(474...64)
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complement(5, .154)
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complement(2937. .3221)
/rpt_family="AluJo"
3871. .3941
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/rpt_family="L2"
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/db_xref="taxon:9606"
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155. .185
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5294. .5594
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4952. .5040
                                                                                                                                                                               /rpt_family-"AluY" complement(10097.
                                                                                                                                                                                                                                                                                                                                                          /rpt_tamil
8338. .864
                                                                                                                                                                                                                                                                                                                                                                                complement(8070. .8120)
/rpt_family="L2"
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/rpt_family="L2"
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           complement(11167.
/rpt_family="MIR"
11349. .11708
                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="MSTA"
complement/oran
                                                                                                /rpt_family="AT_rich"
11080. .11138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family="AluJb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rpt_family="HAL1"
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20-OCT-2000

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RESULT
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47; Conservative
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23685. .23976
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complement(21287. ...
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Canis familiaris mRNA f
X99145
X99145.2 GI:10944717
C3VS protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (20-OCT-2000) V. Savonet, Institute of Interdisciplinary Research - ULB, Building C (local C4-124), Campus Erasme, Route de Lennik 808, 1070 Brussels, BELGIUM On Oct 21, 2000 this sequence version replaced gi:1429313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (06-JUL-1996) V. Savonet, Institute of Interdisciplinary Research - ULB, Building C (local C4-124), Campus Brasme, Route de Lennik 808, 1070 Brussels, BELGIUM revised by [3]

[3] (bases 1 to 4643)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Savonet, V.
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                 1645
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EVLLKNGADVSLLDALGHDSSYVAR IGDNILITLIKTAS ENYMKERELMK KOPSIQO

EVNAKD VDGRTTPLVLATOMCRPA I CQLIL IDGA EI INSENONRTALMICG EYGCXDAV

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LDVTOKCADROLEMEKLLLENDSLSKRVSTRIETTVYPPEKHOKEVTALKSSVADLKRQ

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/db_xref="taxon:9615"
/tissue_type="thyroid"
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for C3VS protein.
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Matches 45; Conserv
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Matches 37; Conserva
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Sequence
AX071367
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Human genes and gene expression products
Patent: WO 0102568-A 1839 11-JAN-2001;
CHIRON CORPORATION (US); HYSEQ, INC. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 371)
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                                                                                                                                                          Homo sapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalla; Butherla; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 401)

1 (bases 1 to 500)

Williams, L.T., Escobedo, J., Innis, M.A., Garcia, P.D., Klinger, J.,

Kassam, A., Reinhard, C., Randazzo, F., Kennedy, G.C., Pot., D.,

Kassam, A., Drmanac, R., Crkenjakov, R., Drmanac, S., Dickson, M.,

Labat, I., Leshkowitiz, D., Kita, D., Garcia, V. and Strache-Crain, B.
                                                                                                                                                                                                                                                                                                                                            Ax071358 401 k
Sequence 1830 from
Ax071358
                                                                                                                                                                                                                                                                                                                            AX071358.1 GI:12581709
                                                                                          Human genes and gene expression products Patent: WO 0102568-A 1830 11-JAN-2001; CHIRON CORPORATION (US); HYSEQ, INC. (US) Location/Qualifiers
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114
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ilarity 100.0%; Pred. No. 1.8e-07;
Conservative 0; Mismatches 0;
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/db_xref="taxon:9606"
79 c 98 g 8
                                1. .401
                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/note="n = A,T,C or G"
85 c 107 g
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from Patent W00102568.
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 2 others
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Best Local Similarity
Matches 37; Conserv
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SHGC-56623 Human Homo sapiens STS cDNA, sequence tagged site
G36947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stanford Human Genome Center (SHGC)
Stanford University School of Medicine
Department of Genetics, M-344, Stanford, CA 94305, USA
Tel: 4157259689
Fax: 4157259689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           G36947.1 GI:2734614
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: myers@shgc.stanford.edu
primer A: ATGCTCTGCCAGGGGTACAG
Primer B: GGAACGAGGTTGAGGCTCTG
STS size: 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Myers, R.M.
Human STSs (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
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                                                                                                                                   Prepared with primer pairs derived from N69830 -- Location/Qualifiers
                                                                                                                                                                                                                                                                                                                             Protocol:
                                                                                                                                                                                                                                 Buffer:
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               83
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KC1:
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                                                                                                                                                                                                                                                                                                                                                       Polymerization:
PCR Cycles:
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               complement(298..317)
92 c 65 g
                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="15"
                                                                 /clone_lib="Human"
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0; Mismatches 0
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50 mM
10 mM
8.3
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60 degrees C for 30
72 degrees C for 23
30
Perkin Elmer 9600
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2 (bases 1 to 1628)
2 (bases 1 to 1628)
1sogal,T. and Otsukl,T.
Direct Submission
Submitted (16.FEB-2000) to the DDBJ/EMBL/GenBank databases. Tailsogal, Helix Research Institute, Genomics Laboratory; 1532-3 Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hrl.co.jp,
                                                                                                                                   Isogai,T., Ota,T., Hayashi,K., Sugiyama,T., Otsuki,T., Suzuki,Y., Mishikawa,T., Nagai,K., Sugano,S., Shiratori,A., Sudo,H., Mishikawa,T., Nagai,K., Sugano,S., Shiratori,A., Sudo,H., Mishikawa,T., Nagai,T., T., Kaku,Y., Kodaira,H., Kondo,H., Sugawara,M., Takhiashi,M., Chiba,Y., Tshida,S., Murakawa,K., Ono,Y., Takiguchi,S., Watanabe,S., Kimura,K., Murakami,K., Ono,Y., Takiguchi,S., Watanabe,S., Kimura,K., Murakami,K., Ishii,S., Kawai,Y., Saito,K., Yamamoto,J., Wakamatsu,A., Nakamura,Y., Nagahari,K., Masuho,Y., Ninomiya,K. and Iwayanagi,T.
                                                                                                                                                                                                                                                                                                                           AK000990.1 GI:7021992 oligo capping; fis (full insert sequence). Homo sapiens embryo, 10 weeks whole embryo, mainly head cDNA mRNA, clone_lib:HEMBA1 clone:HEMBA1002997.
                                                                                                              Unpublished (2000)
                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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l Similarity 100.0%;
35; Conservative (
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                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                      AK000990 1628 bp mRNA PRI 22-FEB-2000
Homo sapiens cDNA FLJ10128 fis, clone HEMBA1002997, weakly similar
to CENTROMERIC PROTEIN E.
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/db_xref="taxon:9606"
97 c 114 g 10:
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2e-06;
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Tel:81-438-52-3951, Fax:81-438-52-3952)

MEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; CDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing and clone selection: Helix Research Institute (supported by Japan Key Technology Center etc.) and Department of Virology, Institute of Medical Science,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            University of
                                                                                                                                       /translation-"MEREHEKSLSEIROLKRELENVKAKLAOHVKPEEHEQVKSRLEOKSGELGKKITELTKNOTLOKEIEKVYLDNKLLKEQAHNLTIEMKNHYVPLKVSEDMK KSGELGKKITELTKNOTLOKEIEKVYLDNKLLKEQAHNLTIEMKNHYVPLKVSEDMK KSHDAII DDLNRKLLDVTQKYTEKKLEMEKLLLENDSLSKDVSRLETVFVPPPEKHEKE IIALKSNITYELKKQLSELKKKCGEDOEKIHALTSENTULKKMMSNOYVPKTHEEVKM TLNDTLAKTNRELLDVKKKFEDINQEEVKIKDKNEILKRNLENTQNOIKAEYISLAEH PLNDTLAKTNRELLDVKKFEDINQEEVKIKDKNEILKRNLENTQNOIKAEYISLAEH PLNDTLAKTNRELLDVKKFEDINGEEVKIKOKEIVTLHAEIKAOKKELDTIQECIKVKYA PLVSFEBCERKKKATEKELKDQLSEOTOKYSYSSEEVKKNKOENDKLKKEIFTLOKDL
                                         RDKTVLIEKSHEMERALSRKTDELNKQLKDLSQKYTEVKNVKEKLVEENAKQTSEILA
VQNLLQKQHVPLEQVEALKKSLNGTIENLKEELKSMQRCYEKEQQTVTKLHQLLENQK
NSSVPLAEHLQIKEAFEKEVGIIKASL*
                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="BAA91457.1"
/db_xref="GI:7021993"
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22. .>1628
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/tissue_type="whole embryo, m
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UIS G14728 250 bp DNA STS 04-JAN-1996

TINITION human STS SHGC-13439.

ESSION G14728.1 GI:1130467

STS sequence; primer; sequence tagged site.

BRGANISM Homo sapiens
Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Gnathostomata; Osteichthyes; Sarcopterygil; Choanata;
Tetrapoda; Anniota; Mammalla; Theria; Eutheria; Archonta; Primates;

Catarrhini; Hominidae; Homo.

UITHORS Myers, R.M.

Unpublished (1995)

Contact: Richard M. Myers
Stanford Human Genome Center (SHGC)
Stanford University School of Medicine
Department of Genetics, M-344, Stanford, CA 94305, USA
Tel: 4157259687
Fax: 4157259689
Email: myers@shgc.stanford.edu

Primer A: AAGGCCCAGAAAGACCATG
Primer B: TGGATGAAAGATGTTCAGGAGG
STS size: 148

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primer_bind
primer_bind
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1 (bases 1 to 421)
Xu, J. Lodes,M.J., Secrist,H., Benson,D.R., Meagher,M.J., Stolk,J.A., King,G.E., Wang,T. and Jiang,Y.
Compounds for immunotherapy and diagnosis of colon cancer and methods for their use
Patent: WO 0.149716-A 195 12-JUL-2001;
CORIXA CORPORATION (US)
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AX193058
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Location/Qualifiers
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Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, L., Birditt, B., Bloom, S., Dors, M., Dickhoff, R., Fleetwood, P., Harrison, G., Bloom, S., Kaur, A., Madan, A., Owen, M.P., Ratcliffe, A., Shaffer, T., James, R., Kaur, A., Madan, A., Owen, M.P., Ratcliffe, A., Shaffer, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE SAMPLING
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC022466
                                                                                                                                         Direct Submission
Submitted (04-FEB-2000) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA
                                                                                                                                                                                                          Rowen,L., Madan,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Bloom,S., Dors,M., Dickhoff,R., Fleetwood,P., Harrison,G., James,R., Kaur,A., Madan,A., Owen,M.P., Ratcliffe,A., Shaffer,T.
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/db_xref="taxon:9606"
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contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
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ACCESSION
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SEQUENCE SAMPLING.
AC022466
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1 (bases 1 to 83775)

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Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, L., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, C., Birditt, B., Rowen, L., Rowen, R., Rowen, L., Rowen, R., Rowe
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (04-FEB-2000) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Hood, L.
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NOTE: This record contains 96 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely
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                                                                                                                                               Chemistry: Dye-terminator Big Dye; 90% of reads Chemistry: Dye-primer Big Dye; 10% of reads Assembly program: Phrap; version 0.990399
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                                                                                                                                                                                                                                   Sequencing vector: pUC18; L08752
                                                                                                                                                                                                                                                                        Contact: leerowen@u.washington.edu
                                                                                                                                                                                                                                                                                                                                    Web site: http://chroma.mbt.washington.edu/msg_www
                                                                                                                                                                                                                                                                                                                                                             Center: Multimegabase Sequencing Center Center code: UWMSC
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gap of unknown length
contig of 871 bp in length
gap of unknown length
contig of 868 bp in length
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contig of 859 bp in length
gap of unknown length
contig of 877 bp in length
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arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
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8: contig of 868 bp in length
gap of unknown length
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contig of 879 bp in length
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ltig of 885 bp in length
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ig of 880 bp in length
of unknown length
ig of 862 bp in length
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g of 865 bp in length

of unknown length

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spap of unknown length 56776: contig of 866 bp in length 57669: contig of 886 bp in length 57669: contig of 893 bp in length 58529: contig of 893 bp in length 58529: contig of 860 bp in length 9ap of unknown length 9ap of unknown length 60263: contig of 875 bp in length 60263: contig of 859 bp in length 9ap of unknown length 60263: contig of 859 bp in length 9ap of unknown length 60263: contig of 859 bp in length 60263: contig of 877 bp in length	contig	gap o gap o contil gap o contil gap o contic gap o gap o	contig of 867 bp in gap of unknown lengt contig of 866 bp in gap of unknown lengt contig of 866 bp in gap of unknown lengt contig of 868 bp in gap of unknown lengt contig of 874 bp in gap of unknown lengt contig of 863 bp in gap of unknown lengt contig of 867 bp in gap of unknown lengt contig of 867 bp in gap of unknown lengt contig of 867 bp in gap of unknown lengt contig of 868 bp in gap of unknown lengt contig of 870 bp in gap of unknown lengt contig of 870 bp in gap of unknown lengt	gap of contig gap of	29861: contig of 874 bp in length  (gap of unknown length 30737: contig of 876 bp in length gap of unknown length 31601: contig of 864 bp in length gap of unknown length 32481: contig of 880 bp in length gap of unknown length 3347: contig of 866 bp in length gap of unknown length 3347: contig of 871 bp in length gap of unknown length gap of unknown length gap of unknown length gap of unknown length contig of 871 bp in length
/GOOD_STATE-1 /GOOD_STATE-1 /GOOD_STATE-1 /POODOCE-30,101* /POODOCE-30,101	/organism="Homo sapiens" //db_xref="taxon:9606" /cell_line="HeLa S3" gene 101575 /gene="QIP1" CDS 101575	AL Submitted (31-MAR-1997) Takahiko Seki, Faculty o University, Department o Aoba-ku, Sendai, Miyagi (E-mail:taka@mail2.pharm Fax:+81-22-217-6873) On Nov 21, 2000 this seq S	AB0025 AB0025 AB0025 Qipl. Homo si Homo si Bukary Mammall 1 (si) Seki, T Cloning disc ri interaa Biochen Biochen Seki, T Closing	67207: 0.6%; y 100.0%; rvative aaaccagagga	* 61141 61997: contig of 857 bp in length  * 61998 62885: contig of 888 bp in length  * 61998 62885: contig of 888 bp in length  * 62886 63756: contig of 871 bp in length  * 62886 63756: contig of 871 bp in length  * 63757 64624: contig of 868 bp in length  * 64625 65487: contig of 863 bp in length  * 64625 65487: contig of 863 bp in length  * 64626: contig of 863 bp in length  * 65488 66346: contig of 859 bp in length

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Best Local Similarity
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 2674 ATCCATCAAAAAAAAAAAAAAAA 2697
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Bovine P-selectin mRNA,
L12041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Strubel, N.A., Nguyen, M., Kansas, G.S., Tedder, T.F. and Bischoff, J. Isolation and characterization of a bovine cDNA encoding a functional homolog of human P-selectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bovidae; Bovinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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1 320 c 348 g 46
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1683
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ASCODMSCSKOGECIETIGNYTCSCYPGFYGPECEYVBECGEEDLPOHYHMNCSHPLG
NESPNSHCSFHCAEGYALNGESELECLASGIWTNSPPOCVAVOCPALKSPEQGSMSCV
                                                                                                                                                                                                            TAAAPTCRAVKCAKLPVTEPIVMNCSNPWGNFSYGSTCSFHCPEGQLLNGSERTVCQE
NGQWSTTMPTCQAGPLTIQETLTYVGGAAAGTTGLVTGSILLALLRRRCRQKDDGKSP
                                                                                                                                                                                                                                                                 QSAEAFQHOSSCSFSCEEGFALVGPEVVHCTALGVWTAPTPVCKALQCQDLPTSTKAR
VNCSHPFGDFRYQSTCSFTCDEGSFLVGASVLQCLDTGNWDAPFPECQAVTCAALPNP
QNGEKTCVQPLGGSSYESTCWFTCHEGFSLSGPERLDCTPSGHWTGSPPTCEEVDTVS
                                                                                                                                                                                                                                                                                                                                                                                                              /product="P-selectin"
/protein_id="AAA30743.1"
/db_xref="GI:304247"
                                                                                                                                                                                             LNPQSHLGTYGVFTNAAFDPSP"
                                                                                                                                                                                                                                                    APAPGVQCPTLIAPKQGTMSCQHHVRNFGLNTTCHFGCKAGFTLLGDSALQCRPSRQW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Bos taurus"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                             HYSNKTYSWNYSRAFCOKYYTDLVAIQNKNEIAYLNETIPYYNSYYWIGIRKINNKWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cell_type="capillary endothelial"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                           translation="MASCPKAIWNWRFQRAVFRTVQLLCFSVLIFEVINQKEVSAWTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start*1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'tissue_lib="lambda Zap II"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 function - cell adhesion molecule for leukocytes
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Pred. No.
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                                                                                         Score 24;
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Burkhart-Schultz, K., Gordon, L., Kyle, A., Ramirez, M., Stilwagen, S.,
Phan, H., Velasco, N., Do, L., Regala, W., Terry, A., Garnes, J.,
Danganan, L., Poundstone, P., Christensen, M., Georgescu, A., Avila, J.,
Liu, S., Attix, C., Andreise, T., Trankheim, M., Amico-Keller, G.,
Coefield, J., Duarte, S., Lucas, S., Bruce, R., Thomas, P., Quan, G.,
Kronmiller, B., Arellano, A., Montgomery, M., Ow, D., Nolan, M.,
Trong, S., Kobayashi, A., Olsen, A.S. and Carrano, A.V.
Sequence analysis of an -1 Mb region in 19p13.2 between GCDH and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (20-JUL-1998) Joint Genome Institute, Lawrence National Laboratory, 7000 East Ave., Livermore, CA 94551, Map and sequence oriented from p telomere to centromere. I R34275 overlaps BAC 246408 to the left by approx. 6 kb. a overlaps cosmid R30633 to the right by approx. 2 kb. Add chr 19 map and sequence information may be obtained at: http://www-bio.llnl.gov/bbrp/genome/genome.html.
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Lamerdin, J.E.
Direct Submission
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Cosmid library constructed at LLNL from flow-sorted chromosomes from hybrid 5HL2-B, which carries chromosome 19 as its only human chromosome." complement(695. 998)
                                                                                                                                                                                                                                                                                                                                                                                                             cerebellar ataxia/ episodic; spinocerebellar ataxia 6; FHM; migraine, hemiplegic 1 complement(join(<2323. .2406,10132. .10242,12236. .12400, 14491. .14692,16705. .16842,18591. .18751,19875. .19974, 32991. .33097,34210. .34269,40408. .>40536)
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/gene="CACNA1A"
                            /Protein_id="AAC26839.1"
//Protein_id="AAC26839.1"
//db_xref="GI:3329353"
//db_xref="GI:3329353"
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LRYEDYVFTGVFTEMVIKMIDLGLVLHOGAYFRDLMVILDFUVYGGALVAFAPTGNS
KGKDLMTIKSLRVLRVLRPLKTIKRLEVKLAVECOVVARDREWKKYEFYDNVLMAL
VVAVOLFKGKEFFCHCDESKEFEXDCRGKYLLYEKNEVKARDREWKKYEFYDNVLMAL
LTLFTVSTGEGWPQVLKHSVDATFENOGPSPGYRMEMSIFYVNYVFPFFFVNIFVA
LTLFTVSTGEGWPQVLKHSVDATFENOGPSPGYRMEMSIFYNOGYFORDWADGNYG
                                                                                                                                                                                                                                                                                            neuronal calcium channel alpha 1A subunit isoform A-1; alpha1A-voltage-dependent calcium channel
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/cell_line="5HL2-B"
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/db_xref="taxon:9606"
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LIIITFQEQGDKMMEEYSLEKNERACIDFAISAKPLTRHMPQNKQSFQYRMWQFVVSF
                                                                                                                                                                                                                                    /product-"CACNL1A4"
                                                                                                                                                                                                                                                                   /codon_start=:
                                                                                                                                                                                                                                                                                                                                                        /note-"calcium channel alphal subunit, partial CDS;
                                                                                                                                                                                                                                                                                                                                                                                       /gene="CACNA1A"
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/rpt_family="AluJo
14709, 14823
/rpt_family="(GA)r
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complement(15243, 15380)
/rpt_family="AluSq"
                                                  /rpt_family="FRAM"
complement/10073. .16248)
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complement/1007
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/rpt_family="(GGAA)n"
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complement(11998, .12156)
/rpt_family="AluSp"
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/rpt_family="(GGGA)n"
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/rpt_family="(GGAA)n"
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/rpt_family="MIR"
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complement(7204, .7500)
/rpt_family="A"
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/rpt_family="MIR"
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complement(10458. 10576)
/rpt_family="FLAM_A"
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/somplement/11:00
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/rpt_family="AluJo"
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                                             AC008601 91552 bp
Homo sapiens chromosome
10 ordered pieces.
               AC008601.5 GI:9256007
                                       AC008601
                                                                                                                                                                                                                 Similarity 100.
24; Conservative
HTGS_PHASE2; HTGS_DRAFT; HTGS_ACTIVEFIN.
                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="FRAM"
complement(26403. .26526)
/rpt_family="MIR"
27318. .27358
                                                                                                                                                                                                                                                             /rpt_family="AluSx"
complement(28908. .29224)
/rpt_family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="(TA)n"
complement(17.89. 17788)
/rpt_family="Aluy"
complement(17801. 18091)
/rpt_family="AluJo"
                                                                                                                                                                                                                                                                                                                                    /rpt_family="MIR"
complement(27335.
/rpt_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="Alusx"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="FRAM"
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/rpt_family="FRAM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="AluSp"
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/rpt_family="AluSp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_fami.
24802. .2
                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(26041. .26138)
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(25576. .25873)
/rpt_family="Aluy"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_family="AluJb"
complement/ose=""
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="FLAM_C"
complement(24923. .2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="LINE2"
complement(22017. .22314)
/rpt_family="Alusx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note=*DDS similarity to AA297200 EST113034 Fetal brain I Homo sapiens cDNA 5' end similar to calcium channel, alpha 1 subunit; (1. 168); 100% identity."

complement(20309. 20609)

/rpt_family="Aludb"

complement(20663. 20961)

/rpt_family="Aludb"

complement(20663. 20961)

/rpt_family="Aludb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note-"DDS similarity to AA297200 EST113034 Fetal brain I Homo sapiens cDNA 5' end similar to calcium channel, alpha 1 subunit, (169. 315), 99% identity."

complement(19222. .19331)

/rpt_family-"FLAM_C"

complement(19875. .20042)

/gene-"CACNAIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(18605. .18751)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene="CACNA1A"
                                                                                                                                                                                                                             0.5%; Score 24; DB 9; 100.0%; Pred. No. 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family-"LINE2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ly-"(GA)n"
                                                                                                                                                                                                                 0;
                                                              5 DNA
                                                                                                                                                                                                                 Mismatches
                                                          NA 23-APR-2001 Clone CTB-105L4, WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                .27387)
                                                                                                                                                                                                               0
                                                                                                                                                                                                                                          Length 40634;
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SOURCE
ORGANISM
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                                                                                                              BASE COUNT
ORIGIN
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TITLE
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Query Match
Best Local Sim
Matches 24;
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                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Consensus quality: 82080 bases at least Q40
Consensus quality: 88633 bases at least Q30
Consensus quality: 90076 bases at least Q20
Estimated insert size: 112000; pulse field gel estimation
Estimated insert size: 91102; sum-of-contigs estimation
Quality coverage: 6.82 in Q20 bases; pulse field gel estimation
Quality coverage: 8.38 in Q20 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 10 contigs. Gaps between the contigs
* are represented as runs of N. The order of the pieces
* is believed to be correct as given, however the sizes
* of the gaps between them are based on estimates that have
* provided by the submittor.
* This sequence will be replaced
* by the finished sequence as soon as it is available and
* the accession number will be preserved.
* 15686 15785; gap of unknown length
* 15685 15785; gap of unknown length
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DOE Joint Genome Institute.
Sequencing of Human Chromosome 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (03-AUG-1999) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA On Jul 18, 2000 this sequence version replaced gi:7708979.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Joint Genome Institute Center Code: JGI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center Project Name: 104792, H334
Center clone name: CIT978SKB_105L4
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                         Similarity
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E Joint Genome Institute.
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    Conservative
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15786
22695
22795
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79106
79206
83243
83343
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26148
                                                                                                                                                                                                      /organism="Homo sapiens"
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/chromosome="5"
                                                                                                                                    /clone="CTB-105L4"
/clone_11b="CalTech human BAC library B"
17406 c 16089 g 28138 t 900 others
                                                                                                                                                                                                                                                                                           ocation/Qualifiers
    0.5%; Score 24; DB
100.0%; Pred. No. 1.0
Live 0; Mismatches
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gap of unknown 1
contig of 15068
gap of unknown 1
contig of 28932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of unknown l
contig of 6909 k
                                                                                                                                                                                                                                                                                                                  contig of 2352
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g of 4037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 f unknown
g of 8758
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of 15068 bp in length
                                                                                                                                                                                                                                                                                                                                                               of 2155
                                                                                                                                                                                                                                                                                                                                                                                                            of 3503
                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
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                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n length
9 bp in length
n length
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length
bp in length
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bp in length
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                                                 Length 91552;
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         Gaps
           0;
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AUTHORS
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AC091820/c
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ORGANISM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Consensus quality: 94051 bases at least 040
Consensus quality: 100633 bases at least 020
Consensus quality: 101439 bases at least 020
Consensus quality: 101439 bases at least 020
Consensus quality: 101439 bases at least 020
Estimated insert size: 130000; pulse field gel estimation
Estimated insert size: 104049; sum-of-contigs estimation
Quality coverage: 7.55 in 020 bases; pulse field gel estimation
Quality coverage: 9.43 in 020 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 8 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (09-JUN-2001) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOE Joint Genome Institute.
Sequencing of Human Chromosome
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DOE Joint Genome Institute.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center Project Name: 295327
Center clone name: CIT-HSPC_286N12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   be preserved.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---Genome Center
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1448
3246
3346
5555
5555
12540
12640
12640
22039
22139
46176
46276
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/chromosome="5"
                                                                                                                 46275: gap of unknown length 669407: contig of 23132 bp in 89507: gap of unknown length 18 104749: contig of 35242 bp in 104749: data of 35242 bp in 104749: data of 35242 bp in 104749: data of 35242 bp in 104747
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                                                                                                                                                                                                                             1347: contig of 1347 bp in length
1447: gap of unknown length
3245: contig of 1798 bp in length
3345: gap of unknown length
5454: contig of 2109 bp in length
5554: gap of unknown length
12539: contig of 6985 bp in length
12539: contig of 6985 bp in length
12639: gap of unknown length
12639: contig of 9399 bp in length
12638: gap of unknown length
12638: gap of unknown length
12638: gap of unknown length
126375: contig of 24037 bp in length
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5 clone CTC-286N12, WORKING DRAFT SEQUENCE.
                                                                                                                                                                                               length
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BASE COUNT ORIGIN

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78511 ATCCATCAAAAAAAAAAAAAAAA 78488
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            Assembly program: XGAP4; version 4.5 Sequencing vector: plasmid; L08752; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Consensus quality: 99048 bases at least Q40 consensus quality: 101362 bases at least Q30 Consensus quality: 102833 bases at least Q30 Consensus quality: 102833 bases at least Q20 Insert size: 104365; sum-of-contigs Insert size: 103377; 4.5% error; agarose-fp Quality coverage: 3.38x in Q20 bases; sum-of-contigs Quality coverage: 2.17x in Q20 bases; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (08-JUL-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 15A, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requestes clonerequest@sanger.ac.uk
On Aug 21, 2000 this sequence version replaced gi:9797475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center project name: dJ894J24
Summary Statistics
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                                                                                                                                                                                                                                                                                       * NOTE: This is a 'working draft' sequence. It currently consists of 13 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: humquery@sanger.ac.uk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center code:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
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                     7451: contig of 7451 bp in length
7452 7551: gap of
7552 13930: contig of 6379 bp in length
13931 14030: gap of
14031 22644: contig of 8614 bp in length
22645 22744: gap of
22745 34795: contig of 100 bp
34796 34895: gap of
34796 34895: gap of
3496 37068: contig of 1273 bp in length
37169 37168: gap of
37169 37168: gap of
37169 37169: contig of 100 bp
37169 37169: gap of
37169 51207: contig of 3414 bp in length
51208 51307: gap of
100 bp
51307: gap of
100 bp
51308 54721: contig of 3414 bp in length
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100.0%; Pr
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Pred. No. 1.4
0; Mismatches
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                                      DEFINITION
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ORIGIN
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Best Local S
Matches 24
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AL353681 113539 bp DNA PRI 09-NOV-2000 Human DNA sequence from clone RP1-158P9 on chromosome 1. Contains putative novel gene, a laminin receptor 1 (67kD, ribosomal protein
                                                                                                                                                                                                                                                         Similarity
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102127 105466: contig of 3340
Location/Qualifiers
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18693 c 18945 g
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51308. .5
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fragment_chain:1
clone_end:T7
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22745. .34795
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7552. .13930
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fragment_chain:2"
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fragment_chain:1"
14031. .22644
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/db_xref="taxon:9606"
/chromosome="6"
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fragment_chain:2"
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fragment_chain:2"
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Pred. No.
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REFERENCE AUTHORS TITLE

JOURNAL

SOURCE VERSION KEYWORDS

ORGANISM

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COMMENT

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    on Aug 14, 2000 this sequence version replaced gi:9800776. During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (05-OCT-2000) Sanger Centre, Hinxton, Cambridgeshire CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SA) (LAMR1) pseudogene, ESTs, STSs and GSSs, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 113539)
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HTG; laminin receptor; LAMR1; RPSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence is the entire insert of clone RP1-158P9 The true left end of clone RP11-504A18 is at 25491 in this sequence. The true right end of clone RP11-221L2 is at 16850 in this sequence.

Location/Qualifiers
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RP1-158P9 is from the library RPCI-1 constructed at the Roswell
Park Cancer Institute by the group of Pieter de Jong. For further
details see http://bacpac.med.buffalo.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence was generated from part of bacterial clone contigs of human chromosome 1, constructed by the Sanger Centre Chromosome 1 Mapping Group. Further information can be found at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em., EMBL, Sv., SWISSPROT; Tr:, TREMBL; WP:, WORMPEP; Information on the WORMPEP database can be found at
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="1"
                                                                  /note="34 copies 2 mer
6117. .6176
/note="5 copies 12 mer
                                                                                                                                                     /note="AluSx repeat: matches 1.
5151. .5540
/note="LTR16C repeat: matches 1.
                                                                                                                                                                                                                                                                                   note-"MIR repeat: matches 32.
                                                                                                                                                                                                                                                                                                                                 /note="I
                                                                                                                                                                                                                                                                                                                                                                          /note="LTR33 repeat: matches 3.
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      /note="match: GSS: Em:AQ420894"
5884. .7159
                                                                                                                                                                                                                                            note="L2 repeat: matches 2021.
                                                                                                                                                                                                                                                                     . 2988
                                                                                                                                                                                                                                                                                                            "L2 repeat: matches 2434. .2708 of consensus"
.2641
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                                                                    copies 12 mer 90% conserved*
                                                                                                              at 86% conserved"
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7384. .7880
/note="LIME3 repeat: matches 5433.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="match: GSS: 9229. .9605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(8538.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8025. 8060

**Note="3 copies 12 mer 100% conserved"

8063. 8199

**/note="LIME3 repeat: matches 5130. .5272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="21 copies 2 mer gt 92% conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="MLT1E repeat: matches 487. .564 of consensus"
13368. .13580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="match: GSS: Em:AQ387164"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="MIR repeat: matches 168.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3220. .8397
/note="AluSg/x repeat: matches 123.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="MLT1H repeat: matches 130. .326 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-*match: GSS: Em:AQ020170*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9897. .10009
/note="MSTC_repeat: matches 1. .107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9639. .9729
/note="MIR_repeat: matches 119.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="match: GSS: Em:AQ454266"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="L2 repeat: matches 2648.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="MIR repeat: matches 2.
17584. .17619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="match: GSS: Em:AQ039767"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13649. .13738
/note="MIR repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="AluSx repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-"MSTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10050. .10195
                                                    /note="32 copies 2 mer aa 79% conserved" complement(22930 .23291)
                                                                                                                                                                                                       /evidence=not_experimental
/product="dJ158P9.1 (putative novel protein)"
join(20456. .20610,24285. .24563)
/gene="dJ158P9.1"
                                                                                                                                                                                                                                                                                                                                          /note="L2 repeat: matches 2595, .27
join(<20456, .20610,24265, .>24563)
                                                                                                                                                                                                                                                                                                                                                                                      18573. .18678
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="12 copies 3 mer att 88% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="MER20 repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="MLTIH repeat: matches 55.
                                                                                                                                                            note="AluY repeat: matches 1. .308 of consensus"
                                                                                                                                                                                                                                                                                              note="match: cDNAs:
                                                                                                                                                                                                                                                                                                                     'gene-"dJ158P9.1"
                                  note-"match: GSS: Em:AQ243912"
                                                                                                                                                                                                                                                                                                                                                                                                      e="MER58B repeat: matches 3. .340 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .8061
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MLT1F repeat: matches 59. . 13218
                                                                                                                                                .21808
                                                                                                                       copies 12 mer 79% conserved*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat: matches 265.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat: matches 2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Em: AQ572508
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           matches 1. .107
                                                                                                                                                                                                                                                                                                 Em: AA608974 *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .171 of consensus*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .218 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 206
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .218 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .201 of consensus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .405 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .535 of consensus
                                                                                                                                                                                                                                                                                                                                                                   2702 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 5952
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ACCESSION
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DEFINITION
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AF165138
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Best Local :
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          Homo sapiens
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                           AF165138 127999 bp
Homo sapiens PAC B39112
                                                                                              AF165138.1
                                                                                                               sequence.
AF165138
                                                                                                                                                                                                                                                                                                         Similarity 100
24; Conservative
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/note="LIPA15 repeat: matches 5319. .6157 of consensus"
33676. .33790
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="U2 repeat: matches 1. .35 of consensus"
31715. .32085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="AluSq repeat: matches 1.
complement(27675. .27862)
/note="match: GSS: Em:AQ202767"
                                                                                                                                                                                                                                                                                                                                                                          /note="LlP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="36 copies 2 mer at 66% conserved"
30841. .31048
/note="MIR repeat: matches 20. .226 of consensus"
31386. .31420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23944. .24190
/note-*LTR33 repeat: matches 265. .521 of consensus*
24224. .24423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="match: GSS: 23827, .23908
                                                                                                                                                                                                                                                                                                                                                                                                                                          'note-"L1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="AluSg1 repeat: matches 1. .291 of consensus"
19729. .29793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="MIR_repeat: matches 56.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24/40. .40039
/note="10 copies 12 mer 70% conserved"
24746. .24859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="45 copies 3 mer
24644. .24739
/note="8 copies 12 mer
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="LTR33 repeat: matches 3, .200 of consensus"
                                                                                              GI:5499744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   te="AluSg repeat: matches'1. .303 of consensus"
45. .27213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e="MIR repeat: matches 81.
                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                           0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .29915
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 repeat: matches 2593. .2680 of consensus"
29987
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.24859
                                                                                                                                                                                                                                                                                                                                                                                                                                   MB1 repeat: matches 5803. .6168 of consensus"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat:
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      Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             copies 2 mer tt 68% conserved"
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                         repeat: matches 5319.
                                                                                                                                                                                                                                                                                                                          Score 24;
Pred. No.
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derived
                                                                                                                                                                                                                                                                                                           Mismatches
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                                                                                                                                       from chromosome 21p11.2,
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                                                                                                                                                                                                                                                                                                                                        DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67% conserved*
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Blechbchmidt,K., Nordsiek,G., Groet,J., Nizetic,D., Hildmann,T.,
Drescher,B., Weber,J., Menzel,U., Schattevoy,R., Yaspo,M.-L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (04-JUL-1999) Genome Analysis, Institute of Molecular Biotechnology, Beutenbergstrasse 11, Jena 07745, Germany Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rosenthal, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
complement(3815, 4015)
/rpt_family="trR33"
/evidence=not_experimental
complement(4350, 4457)
                 complement(10477. .10643
                                                               /evidence=not_experimental
complement(10449. .10643)
                                                                                                                                                /evidence=not_experimental
10286...10355
                                                                                                                                                                                                                               /evidence=not_experimental
complement(8675, .9638)
/rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental complement(7647..7835) /note="GRAIL, score = 49,000%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5820.
                           /note="GRAIL, score = 100.000%,
/evidence=not_experimental
 /note="GenScan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence-not_experimental complement(7647. .7835)
                                                                                                            /rpt_type-tandem
                                                                                                                             /note="homology = 74.30%,
                                                                                                                                                                                                                                                                             /note="Xpound exon prediction,
                                                                                                                                                                                                                                                                                                                                                                                                                              bp frame: 2 phase:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(4924. .5086)
                                                                                                 rpt_unit=atacaaatatttat
                                                                                                                                                                                 'note="GRAIL,
                                                                                                                                                                                                              'evidence=not_experimental
                                                                                                                                                                                                                                                                                                            evidence=not_experimental
                                                                                                                                                                                                                                                                                                                          /note="GRAIL, score = 76.000%,
                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                /note="GenScan, score = 2.77%, op frame: 2 phase: 0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /rpt_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="MZEF, score = 86.8%
/evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
complement(2329. 2395)
/rpt_family="L2"
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complement(1155...1650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3512.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /chromosome="21"
/map="21p11.2"
/clone="PAC B39I12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="MLT1D"
/evidence-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           evidence-not_experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rpt_family-"Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rpt_family="AluSp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _family="AluSg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family="AluSq/x"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .6128
                                                                                                                                                                               score - 52.000%,
 score -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86.8%
 10.66%,
                                                                                                                               score
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comment -
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                                                                                                                                                                                                                                                                             78% (4%)
                                                                                                                                                                             good shadow"
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                                              excellent"
Internal_exon
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exon
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/evidence=not_experimental
complement(15687. .15797)
/rpt_family="MER34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence-not_experimental
complement(15937. .16363)
/rpt_family-"MER34"
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complement(15798. 15936)
/rpt_family="FLAM_C"
                                                                                                                              /evidence=not_experimental
complement(25844. .26036)
/rpt_family="MIR"
                                                                                                                                                                                                                                        /note="GRAIL, score = 99,000%,
/evidence=not_experimental
complement(25058. 25264)
/note="MZEF, score = 91.8%"
                                                                                                                                                                                                                                                                                                                /note="GenScan, score = 16.
207 bp frame: 1 phase: 0"
/evidence=not_experimental
complement(25058. .25264)
                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
complement(25058. .25264)
                                                                                                                                                                                                                                                                                                                                                                                                                         /note="GRAIL, score = 100.000%,
/evidence=not_experimental
complement(22971..23121)
/note="MZEF, score = 99.8%"
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complement(22971. .23121)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="GRAIL, score = 93.000%,
/evidence=not_experimental
complement(21159. .21288)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=not_experimental complement(20386. .20491)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental complement(13942..14062)
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complement(11473. .11546)
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                                                                                                                                                                                                           25419.
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/note="MZEF, score = 97%"
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/evidence=not_experimental
 /rpt_family="MLT1E"
/evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /evidence-not_experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note MZEF, score -
                                                       /evidence=not_experimental
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                                                                                                           /evidence=not_experimental
                                                                                                                                                                                    rpt_family-"AluJo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         te="GenScan, score = 20.21%, comment = bp frame: 0 phase: 1"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family-"MIR"
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                                                                                                                                                                                                           .25679
                                                                                              27141
                                                                            score = 70.6%*
                                                                                                                                                                                                                                                                                                                                                                       16.35%,
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                                                                                                                                                                                                                                                                                                  comment -
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                                                                                                                                                                                                                                                                                                                                                                         Internal_exon
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                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
                                      JOURNAL REFERENCE
                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                   RESULT 2
AC007992
                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                     Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 146842)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens, clone RP11-44N17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
Birren,B., Linton,L., Nusbaum,C., Lander,E., Allen,N., Anderson,M., Baker,J., Baldwin,J., Barna,N., Beckerly,R., Benn,J., Brown,A.,
                                                                                                                                                                                                                                                                             AC007992 146842 bp DNA
Homo sapiens clone RP11-44N17,
                                                                                                                                                                                                      AC007992.9 GI:14150923
HTG; HTGS_PHASE2; HTGS_FULLTOP; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                             ordered pieces
                                                   Unpublished
                                                                                                                                                                                                                                          AC007992
                                (bases 1 to 146842)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental 28410. .33376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
complement(34839 . 34990)
/note="GRAIL, score = 70.000%,
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complement(34029, .34061)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental complement(34839. .34990)
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complement(34839. .34990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence=not_experimental 34382. .34485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental 32575...32737
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/note="GRAIL, score = 41.000%, comment = marginal"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="GenScan, score = 1
152 bp frame: 2 phase: 2"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(34029. .34061)
/note="MZEF, score = 53.6%"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence-not_experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="L1PBa"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="GRAIL, score = 42.000%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family-"LlPB1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="GRAIL, score = 53.000%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="GRAIL, score = 63.000%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rpt_family="AluY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              idence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.5%; Score 24; DB
100.0%; Pred. No. 1.
Live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family-"AluSc"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 9;
1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18.66%,
                                                                                                                                                                                                                                                                                 SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 127999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                comment -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 comment -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         comment - Internal_exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                 09-AUG-2001
IN PROGRESS ***,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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RESULT 27
AC092645
                                                                                                                     VERSION
KEYWORDS
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ORIGIN
     REFERENCE
                                                                                                   SOURCE
                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                  FOCUS
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                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 100.0%;
                                                                                                                                         Homo sapiens chromosome 2 clo
SEQUENCE, 2 unordered pieces.
AC092645 AC069062
AC092645 AC1:14916229
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 147418)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (08-JUL-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on May 20, 2001 this sequence version replaced g1:14141767.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     by the finished sequence as soon as it is available and the accession number will be preserved.

1 138125: contig of 138125 bp in length
138126 138225: gap of 100 bp
138226 146842: contig of 8617 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOTE: This is a 'working draft' sequence. It currently consists of 2 contigs. Gaps between the configs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

This sequence will be replaced
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="RP11-44N17"
/clone_11b="RPCI-11 Human Male BAC"
28217 c 29617 g 46298 t 100 others
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                                                                                                                                                                                                                                             147418 bp
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.58;
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contig of 8617 bp in length.
                                                                                                                                                                                                                   DNA HTG 19-JUL-2001
2 clone RP11-399B17, WORKING DRAFT
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RESULT 28
AL359743/c
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ORIGIN
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JOURNAL
                                                                                                                                                                 Matches
                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                 16322 ATCCATCAAAAAAAAAAAAAAAAA 16345
                                                                                                     4707 atccatcaaaaaaaaaaaaaa 4730
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Insert size: 191000; agarose-fp
Insert size: 147318; sum-of-contigs
Quality coverage: 8.21 in Q20 bases; agarose-fp
Quality coverage: 10.65 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chemistry: Dye-primer ET; 0% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.990319 Consensus quality: 146768 bases at least 040 Consensus quality: 147091 bases at least 030 Consensus quality: 147244 bases at least 020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (19-JUL-2001) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St.
MO 63108, USA
On Jul 19, 2001 this sequence version replaced gi:8247953.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 * NOTE: This is a 'working draft' sequence. It currently consists of 2 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequencing vector: M13; 40%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drafting center: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center project name: H_NH0399B17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center: Washington University Genome Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            be preserved.
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42256
                                                                                                                                                                 Conservative
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                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig7
                                                                                                                                                                                                                                                                                      vector_side:left"
31304 c 31714 g 42434 t
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                                                                                                                                                                                                                                                                                                                                                                                     vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_name:Contig6
clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="RP11-399B17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism-"Homo sapiens"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     .42155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .147418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42155: contig of 42155 bp in length 42255: gap of unknown length 147418: contig of 105163 bp in length.
                                                                                                                                                                                   100.0%;
                                                                                                                                                                                0.5%; Score 24; DB
100.0%; Pred. No. 1.4
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                                                                                                                                                               0;
                                                                                                                                                                 Mismatches
                                                                                                                                                                                                    2.
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                                                                                                                                                               0;
                                                                                                                                                                                                        Length 147418;
                                                                                                                                                                                                                                                                                          101 others
                                                                                                                                                               0;
                                                                                                                                                                 Gaps
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                                                                                                                                                               0
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ACCESSION VERSION KEYWORDS SOURCE

ORGANISM

LOCUS DEFINITION

REFERENCE AUTHORS

JOURNAL

COMMENT

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Assembly program: XGAP4; version 4.5
Sequencing vector: plasmid; L08752; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Consensus quality: 148344 bases at least Q40
Consensus quality: 150217 bases at least Q30
Consensus quality: 151317 bases at least Q20
Consensus quality: 151317 bases at least Q20
Insert size: 152365; sum-of-contigs
Insert size: 152365; sum-of-contigs
Open to the coverage: 4.58x in Q20 bases; sum-of-contigs Quality coverage: 4.47x in Q20 bases; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL359743 153665 bp DNA HTG Homo sapiens chromosome 1 clone RP11-504A18, PROCRESS ***, 14 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (20-JAN-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk on Jul 7, 2000 this sequence version replaced g1:8744888.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 153665)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center project name: bA504A18
Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: humquery@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center: Sanger Centre
Center code: SC
Web site: http://www.sanger.ac.uk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOTE: This is a 'working draft' sequence. It currently consists of 14 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                               2881: contig of 2881 bp in length
2882: 2981: gap of 100 bp
2982: 19709: contig of 16728 bp in length
19710: 19809: gap of 100 bp
19810: 25692: contig of 5883 bp in length
25693: 25792: gap of 100 bp
25793: 43419: contig of 17627 bp in length
43420: 43519: gap of 100 bp
43520: 60321: contig of 16802 bp in length
60322: 60421: gap of 100 bp
60422: 66617: contig of 5596 bp in length
66618: 66171: gap of 100 bp
66618: 66171: gap of 100 bp
66618: 66171: gap of 100 bp
67618: 66171: gap of 100 bp
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                                                                                      108339 108438: gap of 100 bp 1108439 133096: contig of 24458 bp in length 133097 133196: gap of 100 bp 133197 136473: contig of 3277 bp in length 136474 136573; gap of 10604 bp 136674 136573: gap of 10604 bp 136674 136573
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101631 10833
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                 Locati
                               17177: gap of
153665: contig of
                                                                                                                                                           18438: gap of 100 bp
133096: contig of 24658 bp in length
                                                                                                                                                                    1630: gap of 100 bp in length 108338: contig of 6708 bp in length
                                                                                                                                                                                                                                         131: gap of 100 bp
101530: contig of 5099 bp in length
                                                                                                                                                                                                                                                                                   117: gap of 100 bp
82788: contig of 16671 bp in length
888: gap of 100 bp
96331: contig of 13443 bp in length
           on/Qualifiers
                                                                       contig of
                                                                         10504 bp in length
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*** SEQUENCING I
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ORIGIN
                                                                                                                                              RESULT 29
AC015495/c
LOCUS
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                        Db 77947
                                                                                                                            DEFINITION
                                                                                  ACCESSION
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                                       pieces.
AC015495
AC015495.4 GI:10047765
HTG; HTGS_PHASE1; HTGS_DRAFT
                                                                                                                            Homo sapiens
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  sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="RP11-504A18"
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/db_xref="taxon:9606"
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fragment_chain:4"
147178. .153665
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment:00870
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment:01410
fragment_chain:1"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment:00821
fragment_chain:4"
108439. 133096
/note="assembly_fragment:01667
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fragment_chain:2"
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fragment_chain:2"
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fragment_chain:3"
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fragment_chain:3"
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fragment_chain:4
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ns clone RP11-21E14,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (16-NOV-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Sep 10, 2000 this sequence version replaced gi:7249029.
All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html Genome Center
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Birren,B., Linton,L., Nusbaum,
Homo sapiens, clone RP11-21E14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: This is a 'working draft' sequence. It currently consists of 13 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    be preserved.
                                                                                                                                        1 8185: contig of 8185 bp in length
8186 8285; gap of
9661: contig of 1376 bp in length
9662 9761: gap of
100 bp
9762 11131: contig of 1370 bp in length
1132 1231: gap of
11232 57436: contig of 46205 bp in length
57437 57536: gap of
61395: contig of 3859 bp in length
61396 61495: gap of
61396 61495: gap of
61396 65714: gap of
65715 71690: contig of 4119 bp in length
65815 65714: gap of
65715 71690: contig of 3959 bp in length
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Quality coverage: 4.4 in Q20 bases;
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Center clone name: 21_E_14
Center clone name: Statistics
Sequencing vector: M13; M77815; 100% of reads
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
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                                                                81114 81213:
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       309: gap of 100 bp
81113: contig of 9504 bp in length
213: gap of 100 bp
92173: contig of 10960 bp in lengt!
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                                                         Birren, B., Linton, L., Nusbaum, C. and Lander, E.
   Homo sapiens chromosome 18, clone RP11-399L5
Unpublished
                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 156864)
                                                                                                                                                                                                      Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens chromosome 18 clone
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clone_end:SP6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (08-DEC-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 13, 2001 this sequence version replaced gi:13376913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center project information
Center project name: L2629
Center clone name: 399_L_5
Sequencing vector: M13; M77815; 47% of reads
Sequencing vector: Plasmid; n/a; 53% of reads
Sequencing vector: Plasmid; n/a; 53% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 153412 bases at least Q40
Consensus quality: 155766 bases at least Q20
Consensus quality: 155766 bases at least Q20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Insert size: 151000; agarose-fp
Insert size: 155964; sum-of-contigs
Quality coverage: 10.9 in 020 bases; agarose-fp
Quality coverage: 10.6 in 020.
NOTE: This is a 'working draft' sequence. It currently
consists of 10 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                         41811: contig of 41811 bp in length
41812 41911: gap of
41912 43011: contig of 1100 bp
41912 43111: gap of
43012 43111: gap of
43012 43111: gap of
43112 44316: contig of 1205 bp in length
44317 44416: gap of
45557: contig of 1141 bp in length
45558 45557: gap of
45558 45557: gap of
4558 45593: gap of
4558 53893: contig of 8236 bp in length
53894 53993: gap of
53894 53993: gap of
53896 63388: gap of
63389 63388: gap of
63389 79320: contig of 15932 bp in length
63389 79320: contig of 15932 bp in length
63389 79320: contig of 15938 bp in length
79421 116018: contig of 36598 bp in length
116019 1185118: gap of
100 bp
116019 1185118: gap of
100 bp
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center: Whitehead Institute/ MIT Center for Genome Research
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                                                                                                                    147941 148040: gap of 148041 156864: cont
                                                                                                                                                                                                                                             116019 116118:
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                                                                                   Location/Qualifiers
                                                                                                                                                                                           1118: gap of 100 bp
147940: contig of 31822 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome Center
                                                                                                                            contig of 8824 bp in length
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AC025997
Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Illev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McGarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Meldrin, J., Meneus, L., Mihova, T., Miranda, C., Mienga, V., Morrow, J., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 1, clone RP11-296L5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens chromosome 1 clone RP11-296L5 map 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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clone_end:SP6
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Pred. No
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Sequencing vector: Plasmid; n/a; 97% of reads
Chemistry: Dye-terminator Blg Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 155952 bases at least 040
Consensus quality: 155952 bases at least 030
Consensus quality: 157914 bases at least 030
Consensus quality: 157914 bases at least 020
Insert size: 157000; agarose-fp
Insert size: 157703; sum-of-contigs
Quality coverage: 9.8 in 020 bases; agarose-fp
Ouality coverage: 9.7 in 020 bases; agarose-fp
Ouality coverage: 9.7 in 020 bases; agarose-fp
Ouality coverage: 9.7 in 020 bases; agarose-fp

**NOTE: This is a "working draft" sequence. It currently
consists of 9 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.
This record will be updated with the finished sequence
as soon as it is available and the accession number will
be preserved.
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Ye,W.J.,
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All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996–1997)
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Submitted (19-MAR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA Research, MA 02141
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Center clone name: 296_L_5
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69279 69378; gap of 100 bp

69379 98553; contig of 29175 bp in

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7873. .13027
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                                                                                                                                                          Submitted (23-NOV-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 16, 2000 this sequence version replaced gi:6910687. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
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Unpublished
                                                                                                                                        http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                      Direct Submission
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Contact: sequence_submissions@genome.wi.mit.edu
                                              Center code: WIBR Web site: http://www-seq.wi.mit.edu
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Pred. No.
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NOTE: This is a 'working draft' sequence. It currently consists of 30 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                      54233: gap of 100 bp in length 60095: contig of 5863 bp in length 60196 64607: contig of 4412 bp in length 64708 71940 72039: gap of 100 bp 7232 bp 100 bp 72340 72040
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Insert size: 157371; sum-of-contigs
Quality coverage: 3.2 in Q20 bases; agarose-fp
Quality coverage: 3.4 in Q20 bases; sum-of-contigs
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166 32385: gap of 100 bp
168 36106: contig of 3721 bp in length
169 40193: contig of 3987 bp in length
169 40293: gap of 100 bp
169 45635: contig of 5342 bp in length
170 45635: contig of 5342 bp in length
170 45635: contig of 6710 bp
170 50445: contig of 4710 bp in length
170 50545: gap of 100 bp
170 50545: contig of 3887 bp in length
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326; gap of 100 bp
32285; contig of 2959 bp in length
85; gap of 100 bp
36106.
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                                                                   753: gap of 100 bp in 96604: contig of 6851 bp in 704: gap of 100 bp in 103170: contig of 6466 bp in 3270: gap of 100 bp
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71939: contig of 7232 bp in
39: gap of 100 bp
77355: contig of 5316 bp in
270: gap of 100 bp
12353: contig of 9083 bp in
153: gap of 100 bp
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/db_xref="taxon:9606"
/clone="RP11-24L21"
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/note-"assembly_fragment"
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/note="assembly_fragment"
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11396. .14811
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89754. .96604
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72040. .77355
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barna, N., Bastien, Y., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Chopel, Y., Colangelo, M., Collins, S., Coliymore, A., Cooke, P., DeArgellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., FilzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Plerre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Illev, I., Johnson, R., Jones, C., Karatas, A., Larocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheteters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neill, D., Oliver, J., Peterson, K., Phunkhang, P., Plerre, N., Pollara, V., Raymond, C., Retta, R.; Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seanan, S., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Stofanovic, N., Travers, N., Travers, N., Travers, N., Travers, N., Travers, N., Viel, R., Vo, A., Wilson, B., Wux, Wyman, D., Ye, W.J., Young, G., Zainoun, J., Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCCATCAAAAAAAAAAAAAAA 92046
                                                                                                                                                                                                                                                                         Submitted (17-FEB-2001) whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 20, 2001 this sequence version replaced gi:13357287. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 18, clone RP11-625N15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 162810)
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AC090125.3 GI:14150917
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Summary Statistics Sequencing vector: Plasmid; n/a; 10 Chemistry: Dye-terminator Big Dye;
                                                                                  Center project name: L10934 Center clone name: 625_N_15
                                                                                                                          Contact: sequence_submissions@genome.wi.mit.edu
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                                                                                                                                                                                                          Center code: WIBR
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                                                                                                                                                                                                                                  Center: Whitehead Institute/ MIT
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137373. .160271
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27714 c 27809 g 50685 t
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100.0%; Pred. No. 1.
tive 0; Mismatches
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  n/a; 100% of reads
ig Dye; 100% of reads
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18, WORKING
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                                          AUTHORS
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Unpublished
              The sequence of Homo sapiens clone
                                                                                                                                               AC024230.4 GI:14280261
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                              AC024230 164096 bp
Homo sapiens chromosome
                                        Waterston, R.H.
                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                 Homo sapiens
                                                                                                                                                                                                            5 unordered pieces.
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                                                      (bases 1 to 164096)
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118116 134404
134405 134504:
134505 156797
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156798 156897: gap of 100 bp
156898 162810: contig of 5913 bp in length
Location/Qualifiers
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Consensus quality: 160990 bases at least 040
Consensus quality: 162037 bases at least 030
Consensus quality: 162302 bases at least 020
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Insert size: 162510; sum-of-contigs
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33071 c 35965 q
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156898. .162810
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134505. .156797
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/db_xref="taxon:9606"
/chromosome="18"
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580~
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18115: gap of 100 bp
134404: contig of 16289 bp in length
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4 clone RP11-96B10, WORKING DRAFT SEQUENCE.
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Chemistry: Dye-terminator Big Dye; 34% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 161191 bases at least 040
Consensus quality: 162041 bases at least 030
Consensus quality: 162668 bases at least 020
Insert size: 177000; agarose-fp
Insert size: 136366; sum-of-contigs
Quality coverage: 7.84 in 020 bases; sum-of-contigs
Quality coverage: 8.51 in 020 bases; sum-of-contigs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (28-FEB-2000) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. MO 63108, USA On Jun 3, 2001 this sequence version replaced gi:7684535.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 164096) Waterston, R.H.
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24;
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Sequencing vector: plass
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOTE: This is a 'working draft' sequence. It currently consists of 5 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
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Conservative
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18572
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3187
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29976 c 29382 c
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clone_end:SP6
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/db_xref="taxon:9606"
/chromosome="4"
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/note="assembly_name:Contig29
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18471:
0.5%; Score 24; DB 2; 100.0%; Pred. No. 1.4; Live 0; Mismatches
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4: gap of unknown length
6: contig of 1722 bp in length
6: gap of unknown length
1: contig of 15185 bp in length
1: gap of unknown length
6: contig of 58005 bp in length
6: gap of unknown length
6: contig of 87420 bp in length.
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AC064878/c
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JOURNAL
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Abola,A.P., Bruno,D., Conn,L., Dela Rosa,M., Faulkner, Abola,A.P., Bruno,D., Conn,L., Dela Rosa,M., Faulkner, Rederspiel,N., Glukhov,S., Hansen,N., Herman,Z.S., Hym Mao,J., Marathe,R., Morehouse,A.J., Oefner,P., Palm,C., Ramirez,D., Wilhelmy,J., Yu,S. and Davis,R.W. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens chromosome AC064878
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Abola,A.P., Bruno,D., Conn,L., Dela Rosa,M., Faulkner,D., Federspiel,N., Glukhov,S., Hansen,N., Herman,Z.S., Hyman,R., Mao,J., Marathe,R., Morehouse,A.J., Oefner,P., Palm,C.J., Ramirez,D., Wilhelmy,J., Yu,S. and Davis,R.W.
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Abola,A.P., Bruno,D., Conn,L., Dela Rosa,M., Faulkner,D.,
Federspiel,N., Glukhov,S., Hansen,N., Herman,Z.S., Hyman,R.,
Mao,J., Marathe,R., Morehouse,A.J., Oefner,P., Palm,C.J.,
Ramirez,D., Wilhelmy,J., Yu,S. and Davis,R.W.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (24-APR-2000) DNA Sequencing and Technology Center, Stanford University, 855 California Avenue, Palo Alto, CA 94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                  This sequence was finished as follows unless otherwise noted: all regions were double stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone; and the assembly was confirmed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 (bases 1 to 168654)
Bruno,D., Conn,L., Dela Rosa,M., Federspiel,N., Foreman,P.,
Glukhov,S., Hansen,N., Hyman,R., Mao,J., Marathe,R.,
Morehouse,A.J., Oefner,P., Palm,C.J., Ramirez,D., Wilhelmy,J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (24-JUN-2000) DNA Sequencing and Technology Center, Stanford University, 855 California Avenue, Palo Alto, CA 94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC064878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   On Jun 24, 2000 this sequence version replaced gi:8671885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (17-AUG-2000) DNA Sequencing and Technology Center,
Stanford University, 855 California Avenue, Palo Alto, CA 94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center
                                                                                                 restriction digest.
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                                                                                                                                                                                                                                                                       ----- Summary
                                                                                                                                                                                                                                                                                                                                                     Center: Stanford DNA Sequencing and Technology Development
                                                                                                                                                                                                                                                                                                              Center project name: 924
Center clone name: RP11-13I13
                                                                                                                                                                                                                                                                                                                                                                                                                                Center code: SDSTDC
                                                          1. .168654
         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                           Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dela Rosa,M., Faulkner,D.,
sen,N., Herman,Z.S., Hyman,R.,
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FEATURES
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ORGANISM
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Best Local Similarity
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                                                                                                                                                                                                requests: clonerequest@sanger.ac.uk clone requests: clonerequest@sanger.ac.uk clone on Apr 22, 2000 this sequence version replaced gi:7452953. During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: em: EMBL; Sw.; SWISSPROT; Tr.; TREMBL; Wp.; WORMPEP; Information on the WORMPEP database can be found at http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence was generated from part of bacterial clone contigs of human chromosome 20, constructed by the Sanger Centre Chromosome 20 was finished as follows unless otherwise noted; all regions were covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequenced with an alternate chemistry or attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one Mis subclone; and the assembly was confirmed by restriction digest. RPI1-80K6 is from the library details see
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (21-FEB-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSBA80K6 170740 bp DNA PRI 23-FEB-2001 Human DNA sequence from clone RP11-80K6 on chromosome 20 Contains putative novel gene, an RPL36 (60S ribosomal protein L36) pseudogene, ESTs, STSs, GSSs and a CpG island, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
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Mammalia; Eutheria; Primates;
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HTG; CpG island; riboso
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                                                                                                                                                                      /www.chori.org/bacpac/home.htm
                                                                                                                                                     pBACe3.6
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/clone="RPI1-13113"
/clone="lb="RPCI human BAC library 11"
/clone_1168452
/note="single chemistry, phred score 29"
a 29446 c 31528 g 56134 t
                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                             Location/Qualifiers
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100.0%; Pred. No. 1.4;
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 Mismatches

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/note="match: GSS: Em:AQ713131"
16799. 16886
/note="22 copies 4 mer gaga 76%
16800. .16889
                                                                                                                                                                                                                                                                                                                                                                                                                                                9731. 9920

/note="MER3 repeat: matches 1.

complement(11089. .11270)

/note="match: STS: Em:G01521"

11602. .11686
                                                                                                                                                                                                   /note MIR repeat: matches 25. 14423. .14469
                                                                                                                                                                                                                                                                                     /note="match: GSS: Em:AQ233886"
13129. .13195
                                                                                                                                                                                                                                                                                                                   /note="5 copies 22 mer 70% conserved" complement(12948. .13482)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9584. .9688
/note-"MIR repeat: matches 51.
9731. .9920
                                                                                                                  /note="L1PA14 repeat: matches 5711.
15272. .15463
                                                                                                                                                                 14573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental // product="bA80K6.1 (putative novel transcript)" complement(join(9444...9613,13673...13929)) // gene="bA80K6.1" // 9584...9688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8553. .8783

/note="MIR repeat: matches 9. .253 of consensus"
complement(8571. .9123)
/note="match: GSS: Em:AQ535756"
complement(join(<9444. .9613,13673. .>13929))
/gene="bA80K6.1"
                                                                                              note="MIR_repeat: matches
                                                                                                                                                                       /note="MIR repeat: matches 85. .130 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                           /note="L2 repeat: matches 2631.
12701. .12796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="THE1B repeat: matches 1..364 of consensus" complement(8113..8485) /note="match: GSS: Em:AQ005845"
                                                                                                                                                                                                                                                                'note="MIR repeat: matches 190.
                                                                                                                                                                                                                                                                                                                                                                                      /note="16
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7820. .8180
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9. .348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="match: ESTs: Em:AI678044"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="MER3 repeat: matches 2, .207 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note-match: GSS: Em:AQ110616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="MIR repeat: matches 20.
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2697. .2793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note-"match: GSS: Em:AQ214288
                                                                                 .16778
                                                                                                                                                                 .15011
22 copies 4 mer gaga 76% conserved ... 16889
                                                                                                                                                                                                                                              .13305
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                                                                                                66.
                                                                                                . 252
                                                                                                                                                                                                                    .61 of consensus
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                                                                                                                                                                                                                                                             .256 of consensus"
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                                                                                                                                                                                                                                                                                                                                                                                                                          .2710 of consensus*
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                                                                                              of.
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//note="31 conies ?? mer 83% conserved"
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19224. 19374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="4 copies 22 mer 73% conserved"
27030. .27093
/note="16 copies 4 mer agag 78% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="8 copies 6 mer acacac 89% conserved"
complement(23705..24169)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="6 copies 6 mer acacac 97% conserved" 20794. .21401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="12 copies 4 mer caca 87% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="AluY repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"Charlie4a repeat: matches 36. .76 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="L2 repeat: matches 2539. .2704 of consensus"
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32132. .32829
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                 /note="LIMEC repeat: matches 897. .1049 of consensus"
36971. .37156
                                                  /note=*L1MEC repeat: 36819, .36956
                                                                                                                                                               /note="MER58A repeat: matches 1. 32991. .33229
                                                                                                                                                                                                                                                                                                                                                                                                                             /note="MLT1C repeat: matches 187. .466 of consensus"
29906. .30065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="MER5B repeat: matches 5. .128 of consensus"
29362. .29531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="MER58B repeat: matches 2. ,341 of consensus" 27028. .27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="MLT1J repeat: matches 112. .371 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="Charlie4a repeat: matches 76. .439 of consensus"
                                                                                                           33206 ..35037
/note="L1M4 repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="match: GSS: Em:AQ515387"
24527. .24572
26527. .24572 mer 100% conserved"
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                                                                                                                                                                                                                      32132. .32829
/note="match: GSS: Em:AQ381845"
                                                                                                                                                                                                                                                                                                                                 0328. .30452
note="AluJb repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                   /note="AluJb repeat: matches 124. .288 of consensus"
30066. .30327
| note="AluSx repeat: matches 40. .296 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note-"L2 repeat: matches 2245.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="L1PA4 repeat: matches 5798. .6144 of consensus"
19220. .29326
                                                                                                                                                                                                                                                                                                note-"MLT1C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note-"L1PA4 repeat:
/note="MER20 repeat: matches 3.
                                                                                                                                              note-"LIME repeat: matches 5419.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "MER82 repeat: matches 52. .652 of consensus" .21709
                                                                                                                                                                                                                                                                                                                      . .30629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 20785
                                                                                                                                                                                                                                                                             MLTIC repeat: matches 1.
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                                                                                                             matches 3203.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     matches 5566.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              matches 2215. .2293 of consensus
                                                                          matches 1119.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .309
                                                                                                                                                                                                                                                                                                                                       .124 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .2417 of
                                                                                                                                                                                                                                                                                                  .187 of consensus"
 .190 of consensus"
                                                                                                                                                                                                                                                                 .2749 of consensus'
                                                                                                                                                                                       .224 of consensus"
                                                                                                                                                  .5661 of consensus"
                                                                                                               .5031 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5805 of consensus"
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VERSION
KEYWORDS
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AC011628/c
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M.,
Baldwin, J., Barna, N., Beckerly, R., Boguslavkly, L., Boukhgalter, B.,
Brown, A., Castle, A., Colangelo, M., Collins, S., Collymore, A.,
Cooke, P., DeArellano, K., Dewar, K., Domino, M., Donelan, L., Doyle, M.,
Ferreira, P., Fitzhugh, W., Forrest, C., Funke, R., Gage, D.,
Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heeford, A., Horton, L.,
Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J.,
Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N.,
McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Maldrin, J.,
McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Maylor, J., Norman, C.H., O'Connor, T., O'Donnell, P.,
Peterson, K., Pollara, V., Riley, R., Roy, A., Santos, R., Severy, P.,
Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J.,
Tesfaye, S., Tirrell, A., Vassillev, H., Vo, A., Wheeler, J., Wu, X.,
Pollara, J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens chromosome 8 cl
SEQUENCE, 4 Incompanies
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Submitted (08-OCT-1999) Whitehead Institute/MIT Center for Genome Submitted (08-OCT-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Apr 8, 2000 this sequence version replaced gi:6532130.

All repeats were identified using RepeatMasker: html

Smit, A.F.A. & Green, P. (1996-1997)

Smit, A.F.A. & Green, P. (1996-1997)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 8, clone RP11-399D2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         http://ftp.genome.washington.edu/RM/RepeatMasker.html
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NOTE: This is a 'working draft' sequence. It currently consists of 4 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 173938)
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                                                                                                                                                                                                                                               Sequencing vector: M13; M77815; 100% of reads chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.960731 consensus quality: 160592 bases at least 040 consensus quality: 169138 bases at least 030 consensus quality: 171937 bases at least 020 consensus quality: 171937 bases at least 020
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: sequence_submissions@genome.wi.mit.edu
----- Project Information
Center project name: L2100
Center clone name: 399_D_2
                                                                                                                                       Insert size: 182000; agarose-fp
Insert size: 173638; sum-of-contigs
Quality coverage: 5.7 in Q20 bases;
Quality coverage: 6.0 in Q20 bases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center: Whitehead Institute/ MIT Center for Genome Center code: WIBR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTGS_PHASE1;
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. 1.4;
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AC068213/c
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E 2 (bases 1 to 176126)

E 3 (bases 1 to 176126)

Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Bastlen, V., Beda, F., Boukerson, S., Baldwin, J., Barna, N., Barkett, G., Collins, S., Collins, A., Costle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., Darellano, K., Dewar, K., Diaz, J.S., Dodge, S., Domino, M., Doyle, M., Ferreita, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Gangen, J., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Illey, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R.,
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HOMO Sapiens chromosome 15 clone RP11-628M2 map 15, WORKING DRAFT SEQUENCE, 6 unordered pieces.
ACC068213
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Birren, B., Linton, L.,
                                                                                                                                                                                                                                                                                                                       Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
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14430 14529: gap of 100 bp
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14530 44586: contig of 30057 bp in length
44587 44686: gap of 100 bp
44687 104498: contig of 59812 bp in length
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104599. .173938
/note="assembly_fragment"
1 31444 c 31492 g 55047 t
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44687. .104498
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clone_end:SP6
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/clone_lib="RPCI-11 Human Male BAC"
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/db_xref="taxon:9606"
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Sequencing vector: Plasmid; n/a; 73% of reads
Sequencing vector: Plasmid; n/a; 73% of reads
Chemistry: Dye-terminator B1g Dye: 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 174567 bases at least 030
Consensus quality: 175166 bases at least 030
Consensus quality: 175166 bases at least 020
Insert size: 174000; agarose-fp
Insert size: 174000; agarose-fp
Ouality coverage: 15.0 in 020 bases; agarose-fp
Ouality coverage: 14.9 in 020.
**NOTE: This is a 'working draft' sequence. It currently
consists of 6 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.
This record will be updated with the finished sequence
as soon as it is available and the accession number will
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Web site: http://www-seq.wi.mit.edu

Contact: sequence_submissions@genome.wi.mit.edu

Contact: Project Information

Center project name: L10096

Center clone name: 628_M_2
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126175 176126: contig of 49952 bp in length
Location/Qualifiers
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9840 9939: gap of 100 bp

9940 19240: contig of 9301 bp in length

19241 19340: gap of 100 bp

19341 52621: contig of 33281 bp in length

52622 52721: gap of 100 bp

52722 84420: contig of 31699 bp in length
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/note="assembly_fragment"
52722, .84420
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19341. .52621
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/db_xref="taxon:9606"
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126074: contig of 41554 bp in length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Baldwin, J., Barna, N., Beckerly, R., Boguslavkiy, L., Boukhgalter, B., Brown, A., Castle, A., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Domino, M., Donelan, L., Doyle, M., Ferreira, P., Fitzhugh, W., Forrest, C., Funke, R., Gage, D., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Hasford, A., Klein, J., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Leboczky, J., Lieu, C., Locke, K., Madonald, P., Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Meddrim, J., Morrow, J., Naylor, J., Norman, C. H., O'Connor, T., O'Donnell, P., Peterson, K., Pollara, V., Riley, R., Roy, A., Santos, R., Severy, P., Research, M., Collara, V., Riley, R., Roy, A., Santos, R., Severy, P., Research, M., Collara, V., Riley, R., Roy, A., Santos, R., Severy, P., Research, M., Collara, V., Riley, R., Roy, A., Santos, R., Severy, P., Research, M., Collara, V., Riley, R., Roy, A., Santos, R., Severy, P., Research, R., Research, R., Research, R., Research, R., Research, R., Research, R., Researc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC015714 176307 bp DNA
Homo sapiens chromosome 15 clone
SEQUENCE, 20 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 176307)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (17-NOV-1999) whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Feb 3, 2001 this sequence version replaced gi:10047679.

All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Stange-Thomann,N., Stojanovic,N., Subramanian,A., Talamas,J., Tesfaye,S., Tirrell,A., Vassiliev,H., Vo,A., Wheeler,J., Wu,X., Wyman,D., Ye,W.J., Zimmer,A. and Zody,M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens chromosome 15, clone RP11-67N18
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                 Center clone name: 67.N_18

Center clone name: 67.N_18

Sequencing vector: M13; M77815; 52% of reads Sequencing vector: Plasmid; n/a: 48% of reads Chemistry: Dye-terminator B19 Dye; 100% of reads Assembly program: Phrap; version 0.960731

Consensus quality: 171033 bases at least Q30 Consensus quality: 17265 bases at least Q30 Consensus quality: 17367 bases at least Q20 Insert size: 162000; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 176307)
                                                                                                                                                                                                                                                                                                                    Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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                                                                                                                                                                                                                                                                                           Center project name: L1399
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100.0%; Pred. No.
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174407; sum-of-contigs
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RP11-67N18 map 15, WORKING
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currentle consists of 20 contigs. The true order of the pieces is not known and their order in this sequence record
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22135 25437: contig of 3303 bp in length
25438 25537: gap of 100 bp
25538 29117: contig of 3580 bp in length
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14634...15212
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82575; contig of 7619 bp in length
675; gap of 100 bp
89927; contin of 100 bp
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129258: contig of 9522 bp
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119636: contig of 11059 bp in length
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140246: cont
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69039: contig of 6409 bp in length
139: gap of 100 bp
74856: contig of 5717 bp in length
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18549: contig of 2475 bp in length
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15212: contig of 579 bp in length
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99193: contig of 9166 bp in length
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62530: contig of 33313 bp in length
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15974: contig of 662 bp in length
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AC024220
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ORGANISM
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

CE 1 (bases 1 to 179714)

RS Muzny,D.M., Adams,C., Adio-Oduola,B., Ali-osman,F.R., Allen,C., Alsbrooks,S.L., Amaratunge,H.C., Are,J.R., Banks,T., Barbaria,J., Benton,J., Bimage,K., Blankenburg,K., Bonnin,D., Bouck,J., Bowle,S., Bierwa,M., Brown,E., Brown,M., Bryant,N.P., Buhay,C., Burch,P., Burkett,C., Burrell,K.L., Byrd,N.C., Carron,T.F., Carter,M., Cavazos,S.R., Chacko,J., Chavazo,D., Chen,G., Chen,R., Chen,Z., Chowdhry,I., Christopoulos,C., Cleveland,C.D., Cox,C., Coyle,M.D., Dathorne,S.R., David,R., Davila,M.L., Davis,C., Davy-Carroll,L., Dederich,D.A., Delaney,K.R., Delgado,O., Dany,R.L., Ding,Y., Dinh,H.H., Douthwalte,K.J., Draper,H., Elhaj,C., Escotto,M., Falls,T., Ferraguto,D., Flagg,N., Ford,J., Foster,P., Frantz,P., Gabisi,A., Gao,J., Garcia,A., Garner,T., Garza,N., Gill,R., Gorrell,J.H., Glevara,W., Gunaratne,P., Hale,S., Hennandez,O., Hodgson,A., Hogues,M., Holloway,C., Hollins,B., Homsi,F., Howard,S., Huber,J., Hume,J., Jackson,L.E., Jacobson,B., Jia,Y., Johnson,R., Jollvet,S., Joudah,S., Karlsson,E., Kelly,S., Khan,U., King,L., Korvah,J.,
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16 unordered pieces
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HTG; HTGS_PHASE1; HTGS_DRAFT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment" 99294. .108477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74957
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"assembly_fragment"
157084. .171452
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140347. ,156983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
129359. .140246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment"
119737. .129258
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108578, .119636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-"assembly_fragment"
74957. .82575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
92676. .89927
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100.0%; Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
1.4;
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Kovar, C., Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L.C., Lewis, L., Li, J., Li, Z., Lichtarge, O., Lieu, C., Liu, J., Liu, W., Louiseged, H., Lozado, R.J., Lu, X., Lucier, A., Lucier, R., Luna, R., Ma, J., Maheshwari, M., Mapua, P., Martin, R., Martindale, A., Martinez, E., Maheshwari, M., Mahiner, Z., Mitchell, T., Mohabbat, K., Mei, G., Metzkar, M., Miner, G., Miner, Z., Mitchell, T., Mohabbat, K., Morgan, M., Morris, S., Moser, M., Mickerson, E., Nwokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Paycon, B., Peery, J., Peters, L., Pickens, R., Primus, E., Pu, L. L., Quiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I., Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Svatek, A., Tabor, P., Tamerisa, K., Tang, H., Tansey, J., Taylor, C., Taylor, T., Telfrod, B., Thomas, N., Wall, R., Wang, S., Ward, Moore, S., Warren, R., Washington, C., Walliams, G., Williamson, A., Wleczyk, R., Wooden, S., and Globs, R., Wu, Y., Wu, Y., F., Zhou, J., Zorrilla, S., Nelson, D.
Unpublished
2 (bases 1 to 179714)
Worley, K.C.
                                                                                                                                                       Direct Submission
                                                                                                                                                                                                           and Gibbs, R
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COMMENT

TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL

Submitted (28-FEB-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Nov 4, 2000 this sequence version replaced g1:9438328. Direct Submission

Center: Baylor College of Medicine
Center code: BCM
Web Site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc.help@tom.tmc.edu/
Contact: hgsc.help@tom.tmc.edu/
Contact: hgsc.help@tom.tmc.edu/
Contact: hgsc.help@tom.tmc.edu/
Conter project name: RP11-33A14
Center clone name: RP11-33A14
Center long vector: M13; L08821
Center clone name: RP11-33A14
Center long vector: M13; L08821
Center story betterminator Big Dye: 100% of reads
Sequencing vector: M13; L08821
Chemistry: Dye-terminator Big Dye: 100% of reads
Assembly program: phrap; version 0.990329
Consensus quality: 161536 bases at least Q40
Consensus quality: 169887 bases at least Q30
Consensus quality: 174026 bases at least Q20
Estimated insert size: 175060; sum-of-contigs estimation
Quality coverage: 3.8x in Q20 bases; sum-of-contigs estimation
Quality coverage: 3.8x in Q20 bases; sum-of-contigs estimation

NOTE: Estimated insert size may differ from sequence length (see http://www.higsc.bcm.tmc.edu/docs/Genbank\_draft\_data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 16 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will

be preserved 44604 44704 76529 104571 104671 10238 120338 131095 132095 132095 132095 132095 132095 132095 44603: contig of 44603 bp in length 44703: gap of unknown length 76528: contig of 31825 bp in length 76528: gap of unknown length gap of contig gap of unknown length contig of 11657 bp in gap of unknown length contig of 10139 bp in contig of 27942 bp in gap of unknown length contig of 15567 bp in unknown length of 8845 bp in length unknown bp in length length length length length length

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BASE COUNT
ORIGIN
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ORGANISM
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                                                                                                                   COMMENT
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Best Local Similarity
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                                                                                                                                                                                                 JOURNAL
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                                                                                                                                                                                                                                                                                                Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Baldwin, J., Barna, N., Beckerly, R., Boguslavkiy, L., Boukhgalter, B., Brown, A., Castle, A., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Domino, M., Donelan, L., Doyle, M., Ferreira, P., Fitzhugh, W., Forrest, C., Funke, R., Gage, D., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Meddrim, J., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Meddrim, J., Mornao, V., Riley, R., Roy, A., Santos, R., Severy, P., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Tirell, A., Vassillev, H., Vo, A., Wheeler, J., Wu, X., Wu, X., Vannov, R., Vannov, R., Subramanian, A., Talamas, J., Varnov, R., Subramanian, A., Talamas, J., Wu, X., Williams, R., Subramanian, A., Wu, X., Wu, X., Williams, R., Subramanian, A., Wu, X., Wu, X., Williams, R., Subramanian, A., Wu, X., Wu, X., Williams, R., Subramanian, A., Williams, 
                                Submitted (25-OCT-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on May 30, 2001 this sequence version replaced gi:14150963. All repeats were identified using RepeatMasker:

Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Birren, B., Linton, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; 1 (bases 1 to 179813)
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http://ftp.genome
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174641
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176985
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169908
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163512
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/db_xref="taxon:9606"
/chromosome="3"
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163411:
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174640: contig of 1960 bp in length
174740: gap of unknown length
176884: contig of 2144 bp in length
176984: gap of unknown length
178118: contig of 1134 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           169907:
170007:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166403;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of unknown locating of 3504 locating of unknown conting of 2573 locating of 2573 locati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32966 g 56830 t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 24;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nusbaum, C. and Lander, E.
me 8, clone RP11-31K23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8, clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of 4987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 2792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1539
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 179714;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FOCUS
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FOCUS

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BASE COUNT
ORIGIN
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AUTHORS
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ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 42
AC092929/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db 130852 ATCCATCAAAAAAAAAAAAAAAA 130829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
           Manmalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

CE 1 (bases 1 to 184556)

RS Muzny, D. M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C.,

RS Muzny, D. M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C.,

RS Muzny, D. M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C.,

Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J.,

Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J.,

Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J.,

Bowle, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buhey, C.,

Carrier, M., Cavazos, S. R., Chacko, J., Chavez, D., Chen, G., Chen, R.,

Carter, M., Cavazos, S. R., Chacko, J., Chavez, D., Chen, G., Chen, R.,

Carter, M., Cavazos, S. R., Chacko, J., Chavez, D., Chen, G., Chen, R.,

Carter, M., Cavazos, S. R., Chacko, J., Caveciand, C. D., Cox, C.,

Cohen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C.,

Coyle, M.D., Dathorne, S. R., David, R., Davila, M.L., Davis, C.,

Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delgado, O.,

Davy-Carroll, L., Dederich, D.A., David, R., Davila, D., Daper, H.,

Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H.,

Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H.,

Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H.,

Foster, P., Frantz, P., Gabisi, A., Gao, J., Garrier, T.,

Garza, N., Gill, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Haile, S.,

Hamilton, K., Harris, C., Harris, K., Hart, M., Havlak, P., Hawes, A.,

Hernandez, J., Hernandez, O., Hodgson, A., Hogues, M., Holloway, C.,

Hamilton, K., Harris, C., Harris, K., Hart, J., Hulme, J.,

Tackers, P., Tackers, D., Homs, J., Hohmen, J.,

Tackers, T., Harris, C., Harris, K., Hart, J., Hulme, J.,

Tackers, M., Harris, C., Harris, K., Hart, J., Hulme, J.,

Tackers, M., Harris, C., Harris, K., Hart, J., Hulme, J.,

Tackers, M., Harris, C., Harris, K., Hart, J., Hulme, J.,

Tackers, M., Harris, C., Harris, H., Harris, C., Harris, M., Harlis, C., Harris, K., Harris, D.,

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens chromosome 3q clone RP11-569L16, WORKING DRAFT SEQUENCE, 6 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG; HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC092929.1 GI:15135419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence. It currently consists of 2 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 by the finished sequence as soon as it is available and the accession number will be preserved.

1 133073: contig of 133073 bp in length
133074 133173: gap of 100 bp
133174 179813: contig of 46640 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55481 a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="RPCI-11 Human Male BAC"
35913 c 34555 g 53764 t 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .179813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /map-"8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="RP11-31K23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                http://www-seq.wi.mit.edu
Jacobson, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
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Length 184556;

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547 others

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FEATURES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (09-AUG-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (see http://www.hgsc.bom.tmc.edu/docs/Genbank_draft_da
NOTE: This is a 'working draft' sequence. It currently
consists of 6 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.
This record will be updated with the finished sequence
as soon as it is available and the accession number will
be preserved.
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136573
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164774
177164
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Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Project Information
                                                                                                                            1. .184556
                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                  ocation
                                                                                                                                                             66150: contig of 66150 bp in le 66250: gap of unknown length 106111: contig of 39861 bp in le 106211: gap of unknown length 136472: contig of 30261 bp in le 136572: gap of unknown length 164673: contig of 28101 bp in le 164673: gap of unknown length 177163: gap of unknown length 177263: gap of unknown length 184556: contig of 7293 bp in ler
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: plasmid; 11%
Chemistry: Dye-primer ET; 89% of reads
Chemistry: Dye-terminator Big Dye; 11% of reads
Assembly program: Phrap; version 0,990319
Consensus quality: 18139 bases at least 040
Consensus quality: 18265 bases at least 030
Consensus quality: 183566 bases at least 020
Consensus quality: 183566 bases at least 020
Insert size: 194000; agarose-fp
Insert size: 185454; sum-of-contigs
Quality coverage: 4.67 in 020 bases; sum-of-contigs
Quality coverage: 4.91 in 020 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name: H_NH0569L16
Sequencing vector: M13; 89%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (22-JAM-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
MO 63108, USA
On Jun 17, 2000 this sequence version replaced gi:7233752.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                   NOTE: This is a 'working draft' sequence. It currently consists of 6 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Waterston, R.H.
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                                              1328: contig of 1328 bp in length 1428: gap of unknown length 8721: contig of 7293 bp in length 8821: gap of unknown length 36928: contig of 28107 bp in length 37028: gap of unknown
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100.0%; Pred. No. 1.4;
contig of 39862 bp in gap of unknown length
                                           gap of unknown length
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RESULT 44
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AUTHORS
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Matches 24
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            Biren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Beda, F., Boguslavkly, L., Boukhgalter, B., Brown, A., Burkett, G., Campoplano, A., Cooke, P., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Dodge, S., Domino, M., Doyle, M., DeArellano, K., Dewar, K., Dodge, S., Domino, M., Doyle, M., Garland, J., Ferreira, P., FitzHugh, W., Forrest, C., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Karatas, A., Klein, J., Landers, T., Largocque, K., Lahoczky, J., Levine, R., McBarthy, M., McBarna, P., McGurk, A., McKernan, K., McPheeters, R., McGarthy, M., McKernan, K., McPheeters, R., Meddrim, J., McBarnan, C., Horton, T., O'Donnell, P., Morrow, J., Naylor, J., Naylor, J., Naylor, J., Naylor, T., Miranda, C., Mlenga, V., Morrow, J., Naylor, J., Peterson, K., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Sihozers, R., Schauer, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Schauer, S., Schaue
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Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 8, clone RP11-687M23
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Homo sapiens chromosome 8 clone RP11-687M23
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/note="assembly_name:Contigl1"
a 35403 c 35563 g 56812 t
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/db_xref="taxon:9606"
/chromosome="3"
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/note="assembly_name:Contig8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.5%; Score 24;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .8721
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Testaye, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
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ORIGIN
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Best Local
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24; Conservative
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misc_feature
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Travers,M., Trigilio,J., Vassiliev,H., Viel,R., Vo,A., Wilson,B., Wu,X., Wyman,D., Ye,W.J., Young,G., Zalnoun,J., Zimmer,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         http://ftp.genome.washington.edu/RM/RepeatMasker.html
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Insert size: 189663; sum-of-contigs
Quality coverage: 10.7 in Q20 bases; agarose-fp
Quality coverage: 10.7 in Q20.
NOTE: This is a 'working draft' sequence. It currently
consists of 4 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.
This record will be updated with the finished sequence
as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing vector: plasmid: n/a; 53% of reads chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: phrap; version 0.960731 consensus quality: 188836 bases at least 040 consensus quality: 189476 bases at least 030 consensus quality: 189476 bases at least 020 consensus quality: 189575 bases at least 020 Insert size: 188000; agarose-fp Insert size: 18963; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project name: L4260
Center clone name: 687_M_23
-----Summary Statistics
Sequencing vector: M13; M77815; 47% of
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 37424: contig of 37424 bp in length
37425 37524: gap of 100 bp
37525 42149: contig of 4625 bp in length
42150 42249: gap of 100 bp
42250 177306: contig of 135057 bp in length
177407 189963: contig of 12557 bp in length.
vector_side:right*
1 36557 c 37255 g
                                                                                                          /note="assembly_fragment"
177407. .189963
                                                                                                                                                                                                                                    vector_side:left"
                                                                                                                                                                                                                                                                               clone_end:SP6
                                                    clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                              /map="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                        /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                          /clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                     /chromosome="8"
                                                                                                                                                                                                                                                                                                 note-"assembly_fragment
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0.5%; Score 24; DB 2; 100.0%; Pred. No. 1.4;

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Length 189963;

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COMMENT
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AUTHORS
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AUTHORS
TITLE
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KEYWORDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Barna, N., Bastien, V., Beda, F., Boguslavkiy, L., Boukhgalter, B., Brown, A., Burkett, G., Campoplano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., Dearellano, K., Dewar, K., Diaz, J.S., Dodge, S., Ferreira, P., EltzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Iliev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., Norman, P., McKernan, K., Pierre, N., Pisani, C., Pollara, V., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, T. M., Oliver, J., Peterson, K., Rogov, P., Rothman, D., Roy, A., Santos, R., Schauer, S., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Tirella, A., Travers, M., Trijillo, J., Vassilev, H., Viel, R., Vo, A., Wilson, B., Mu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J., Vo, A., And Zodv, M., Wann, D., Ye, W.J., Young, G., Zainoun, J.,
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Birren, B., Linton, L.,
               NOTE: This is a 'working draft' sequence. It currently consists of 33 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as
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Mammalia: Eutheria; Primates; Catarrhini; Hominidae; Homo
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                                                                                                                                                                                                                                                                                                                                     Sequencing vector: Plasmid; n/a; 100% of reads chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap: version 0.960731 Consensus quality: 19894 bases at least Q40 Consensus quality: 19922 bases at least Q30 Consensus quality: 202054 bases at least Q30 Consensus quality: 202054 bases at least Q30
                                                                                                                                                                                               Quality coverage: 3.6 in Q20 bases; agarose-fp Quality coverage: 3.9 in Q20 bases; sum-of-contigs
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Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                Insert size: 220000; agarose-fp
Insert size: 203850; sum-of-contigs
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71733: contig of 9948
71833: gap of 100 bp
81685: contig of 9852
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runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number wil and the accession number will

147304 158691: contig of 19205 bp in 158692 158791: gap of 100 bp 158692 158791: gap of 100 bp 158792 175433: contig of 175434 17550 98886 98985: gap of 100 bp 98986 109757; contig of 10772 bp in length 109758 109857: gap of 100 bp 10988 118004: contig of 8147 bp in length 118005 118104: gap of 100 bp 118105 127898: contig of 9794 bp in length 70: contig of 70 bp in length
71 170: gap of 100 bp
171 1131: contig of 961 hr '1132 1231: gap of 26 7625; gap of 100 bp in 1, 26 7625; gap of 1699 bp in 1, 25 9424; gap of 100 bp in 1, 25 9424; gap of 100 bp in 1, 27 11373; contig of 1849 bp in 1, 27 11373; gap of 100 bp in 1, 27 11399; contig of 2526 bp in 1, 27 11399; gap of 100 bp in 1, 27 113860; contig of 1761 bp in 1, 27 113860; contig of 1761 bp in 1, 28 113860; conti 27998: gap of 100 bp 147203: contig of 19205 bp in 833: gap of 100 bp 
81685: contig of 9852 bp in length 
785: gap of 100 bp 
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337: gap of 100 bp 
98885: contig of 9548 bp in length 
9885: contig of 9548 bp in length 31: gap of 100 bp in length 1949: contig of 718 bp in length 9: gap of 100 bp 2985: contin of ^gap of 100 kg contig of 21467 bp in length 100 bp of 542 bp in length 100 bp 9950 bp in length. 100 bp f 1270 bp in length 00 bp 936 bp in length 1070 bp bp in length in length in length length length length length length length length length length

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Job time: 15600 sec

Search completed: April 10, 2002, 19:18:41

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Colon

tumour relat colon cancer cDNA clone

encoding huma

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Copyright (c) 1993 - 2000 Compugen
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 WPI; 2001-483899/53
                              Mao Y,
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                                                          (SHAN-) SHANGHAI BORONG GENE DEV CO
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Best Local Similarity 100.0%;
Matches 74; Conservative
                                              Claim
                                                                           New polynucleotides encoding secreted human proteins - are derived from human foetal brain, adult brain, adult blood or placenta cDNA libraries, useful, e.g. as potential immunomodulators
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25-APR-1997;
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                                                                                                                                                                                                                                                                                                   (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tumour
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Polypeptide-human myosin heavy chain 74 and polynucleotide for said polypeptide .
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DB; AAW85608.
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LA, Spaulding
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97US-0845296
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2.5e-19;
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Best Local
     The present sequence is one of a large number of 5' ESTs derived from mRNAS encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5', ends and can therefore be
                                                                                                                                                                                       New nucleic acid that is a 5' expressed sequence obtaining cDNAs and genomic DNAs that correspond diagnostic, forensic, gene therapy and chromosome
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                                                                                                                                                                 Claim 1; SEQ ID
                                                                                                                                                                                                                                                  WPI; 2000-500381/45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence of clones ci25_4 (AAV83132), da228_6 (AAV83133), du410_5 (AAV83134), eh80_1 (AAV83135), er359_1 (AAV83136), fh123_5 (AAV83137) fm60_1 (AAV83136) or fr473_2 (AAV83139), (all clones are deposited a ATCC 98415) and the proteins they encode are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals for example, tumour suppression/invasion activity, immune system boosting activity. The polynucleotides are also believed to be usefur for gene therapy. This polynucleotide was isolated from a human foetal brain cDNA library.
                                                                                                                                                                                                                                                                                                                                  26-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                            21-FEB-2000; 2000EP-0200610
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
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1 Similarity 100.0%;
74; Conservative
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J. 2.5e-19;
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                                                                                                                                                                                                     tag (5' EST) for to 5'ESTs and for
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RESULT

AAX41086

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 355 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; secreted protein; EST; expressed sequence tag; diagnosis; forensic; gene therapy; chromosome mapping; signal peptide; upstream regulatory sequence; cytokine activity; cell proliferation; differentiation; haematopoiesis regulation; tissue growth regulation; reproductive hormone regulation; chemotactic; chemokinetic; haemostatic;
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                        AAX10826 to AAX11093 represent 5' expressed sequence tags (ESTs) for human secreted proteins, and encode the proteins given in AAV10602 and AAX11994 to AAX12260, respectively. The proteins given represent the signal peptide and an N-terminal fragment of a secreted protein. The nucleic acid sequences can be used for producing secreted human gene products. They can also be used to develop products for diagnosis and therapy. The proteins obtained may have cytokine activity, cell proliferation/differentiation activity, haematopoiesis regulating activity, tissue growth regulating activity, activity, reproductive hormone regulating activity, reproductive hormone activity activity, receptor/ligand activity, anti-inflammatory activity, tumour inhibition activity or other activities. The products
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-JUN-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-AUG-1997;
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cDNA libraries prepared from kidney, fetal kidney, dystrophic
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     used in
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98WO-IB01238
  forensic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                    heart tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1,3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           356
     gene therapy
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Pred.
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3.2e-14;
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        chromosome
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequences can also be used for obtaining corresponding promoter sequences. The nucleic acids encoding the signal peptide can be used for directing extracellular secretion of a polypeptide or the insertion of a polypeptide into a membrane, or importing a polypeptide into a cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4460
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                                                                                                                                                                                                  10-OCT-1997;
10-OCT-1997;
10-OCT-1997;
11-OCT-1997;
                                                                                                                                                                                                                                                                                                                                       Cancer associated antigen; diagnosis; research; treatment; breast cancer; colon cancer; gastric cancer; renal cancer;
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                                                                                                                                                                                                                                                                                                                                prostate cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                  Sequence of C3Vs gene
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                                                                                                                                                                                                                                                                                                                                                                                                   AAX40197;
                                                                                                                                                                                                                                                                                                                                                                                                                    AAX40197 standard; DNA; 1980 BP
                                                                                                                               WPI;
                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                   New isolated cancer associated nucleic acids and polypeptides isolated using sera from cancer patients, used to develop products for the diagnosis, monitoring or treatment of cancers
                                                                                                                       P-PSDB;
                                                                                                                                                         Pfreundschuh
                                                                                                                                                                 Chen Y,
                                                                                                                                                                                 (LUDW-)
                                                                                                                                                                                                                                   22-JUN-1998;
17-JUL-1997;
                                                                                                                                                                                                                                                             15-JUL-1998;
                                                                                                                                                                                                                                                                               28-JAN-1999.
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DB; AAY06996.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            356 BP; 110
                                                                                                                                                                 Gout
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                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
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97US-0061765.
97US-0948705.
97GB-0021697.
                                                                                                                                                                                  INST CANCER RES
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Sahin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 61; DB; Pred. No. 3.2
0; Mismatches
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                                                                                                                                                         O'Hare M, 'Scanlan MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 G;
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t E;
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                                                                                                                                                                                                                                                                                                                                             cancer;
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The invention relates to a method for diagnosing a disorder characterised by expression of a human cancer associated antigen precursor coded for by a nucleic acid molecule (NAM). The method comprises: (a) contacting a biological sample isolated from a subject with an agent that specifically binds to the NAM, an expression product or a fragment of an expression product complexed with an HLA molecule; and (b) determining the

interaction

between

the agent and

the NAM or the

product

85

Claim

67;

Page 776-777; 787pp; English.

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RESULT
AAC27789
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                           The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA ilbraries. Such ESTs are not well suited for isolating cDNA sequences cDNA sequences they are of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5' ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used to obtain upstream regulatory sequences and to design environment and secretic correspondents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; 5
                                                                                                                                                                                                                                    Claim 1; SEQ ID 31864; 71pp + CD-ROM; English.
                                                                                                                                                                                                                                                            New nucleic acid that is a 5' expressed sequence tag (5' EST) obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and diagnostic, forensic, gene thorapy and chromosome mapping proc
                                                                                                                                                                                                                                                                                                                                WPI;
                                                                                                                                                                                                                                                                                                                                                          Dumas Milne Edwards
                                                                                                                                                                                                                                                                                                                                                                                     (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                  26-FEB-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-SEP-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC27789 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC27789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            determination of the disorder. The products and methods can be used in the disgnosis, monitoring, research, or treatment of conditions characterised by the expression of various cancer associated antigens. The invention provides nucleic acid sequences and encoded polypeptides which are cancer associated antigen precursors expressed in human breast cancer, renal cancer, colon cancer, gastric cancer, prostate cancer and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1980 BP; 683
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5' EST;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome
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                                                                                                                                                                                                                                                                                                                                                     Duclert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence tag;
mapping; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351 C;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            511 G;
                                                                                                                                                                                                                                                                                                                                                     Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    secreted protein; cDNA isolation
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Sequence

361 and

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885 gtaggccaacaatatgtcaactgctgatagatagagg

921

Matches

Local

37; Conser

B₽;

107

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98

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87

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other;

Conservative

0 Score Pred.

Mismatches

0.8%;

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DB 22; 1 6.3e-05; hes 0;

Length 371;

Indels

0;

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0

secretion

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CC The present sequence is one of 3351 sequences in a library of human CC polynucleotides. The library is used to detect differentially expressed CC genes correlated with a cancerous state of a mammalian cell and can CC detect colon, prostate, breast and lung cancer. The library can be used CC to produce probes for detection of mRNA and to produce additional copies of the polynucleotides. The probes can be used for chromosome mapping of CC the polynucleotide and for detection of transcription levels. Riboxymes CC or antisense oligonucleotides can be generated. The polynucleotides and CC their gene products are used as generic or biochemical markers (e.g. in CC carcinogenesis pathway and/or monitor the earliest changes along the CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of therapies and CC carcinogenesis pathway and/or monitor the efficacy of the efficacy of the carcinogenesis and compo
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Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Williams LT, Escobeuc , Reinhard C, Randazzo F, Crkenjakov R, Drmanac S, Garcia V, Jones
Sequence
                                                                                                                                                                                                                                                                                                                                                                  Claim 9; Page 807; 1046pp;
                                                                                                                                                                                                                                                                                                                                                                                                Library of polynucleotides for diagnosing a cancerous state mammalian cell and detecting cancer, particularly of the coprostate, comprises 3351 human polynucleotide sequences -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-091805/10
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02-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; cytostatic; gene therapy; colon cancer; breast cancer; lung cancer; cancer detection; ;
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nes 37; Conserv
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  371
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                                    hyperplasia.
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99US-0142311.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J, Innis MA,
Kennedy GC,
S, Dickson M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ĭ,
                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 37;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strache-Crain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Garcia PD,
Pot D, I
Labat I,
le-Crain B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1839.
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6.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 PD,
O, Lamson (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           921
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prostate cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Leshkowitiz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Klinger J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                        is state of the colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drmanac
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anac R;
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                                                                                                              Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-JUL-1999;
02-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200102568-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel human polynucleotide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Library of polynucleotides for diagnosing a cancerous state of mammalian cell and detecting cancer, particularly of the colon prostate, comprises 3351 human polynucleotide sequences -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Williams LT, Escobedo J, Reinhard C, Randazzo F, Crkenjakov R, Drmanac S, Kita D, Garcia V, Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-2000; 2000WO-US18374.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-091805/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CHIR ) CHIRON CORP. (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                 Sequence 401
  187
                          gtaggccaacaatatgtcaactgctgatagatagagg 921
gtaggccaacaatatgtcaactgctgatagatagagg
                                                                                                              Similarity 100
37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                    B₽;
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99US-0142311.
                                                                                                                                                                                                                                                    114 A;
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                                                                                                                                        0.8%;
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                                                                                                                                                                                                                                                       85
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Kennedy GC, Pot D, Lamson G, Drn
Dickson M, Labat I, Leshkowitiz
LW, Strache-Crain B;
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                                                                                                                 0,
                                                                                                                                           Score 37;
Pred. No.
                                                                                                                                                                                                                                                          107
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                                                                                                                 Mismatches
                                                                                                                                                                                                                                                       <u>ن</u>
                                                                                                                                                                                                                                                       93
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                                                                                                                                           DB 22; 1
6.2e-05;
                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                          2 other
                                                                                                                    0
                                                                                                                                                                        Length 401;
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nanac R;
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cc sequence tags (sESTs), isolated from human, mouse, chicken and ratice tissue sources. The sESTs can have a range of activities depending on the tissues they were isolated from human, mouse, chicken and ratice the tissues they were isolated from the activities include: the tissues they were isolated from. The activities include: chemokinetic; analgesic; haemostatic; thrombolytic; antilifiammatory; cc chemokinetic; analgesic; haemostatic; thrombolytic; antilifiammatory; cc cytostatic; antiparkinsonian; antilucer; osteopathic; neuroprotective; cc antiasthmatic; vulnerary; antilucer; osteopathic; encurprotective; cc anticonvulsant; and antidepressant. The sESTs can be used for gene ct therapy and in vaccines. The sESTs are useful as probes for the collective; which correspond to the sESTs. Proteins encoded by the sESTs are useful in assays for determining biological activity and raising cantibodies. They may be useful for treatment of autoimmune disorders (authal), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, costeoporosis, osteoarthritis, central nervous system disorders (conditions costeoarthritis, bacterial, fungal or viral infections, depression and psoriasis. AAA45926 to AAA45931 represent inker variants which are given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiulcer; osteopathic; neuroprotective; nootropic; antipsoriatic; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoarthritis; central nervous system disorder; Alzheimer's disease; stroke; Parkinson's disease; Huntington's disease; coagulation disorder; Parkinson's disease; inflammatory disorder; Crohn's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAA45014 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     expressed sequence tag: EST; probe; chemotactic; proliferative; immunomodulatory; haematopoietic; chemokinetic; analgesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; mouse; chicken; rat; secreted expressed sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-APR-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 616; 803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-317938/27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Jacobs K,
Merberg D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GEMY ) GENETICS INST INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        infection; depression; psoriasis; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to AAA45925 represent specifically claimed secreted expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         McCoy JM,
Treacy M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lavallie ER,
Bowman MR;
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246 A;

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G; 120 T; 0 other;

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The present invention describes colon tumour associated proteins (I) and (CC (I) and (II) can be used in joine through and vaccine production. (I) and (CC (II) may be used in the prevention, diagnosts and treatment of diseases (CC associated with inappropriate colon tumour associated protein (TCAP) (CC expression, such as colonic cancer. For example, (I) and (II) may be used to treat disorders associated with decreased expression by (CC used to treat disorders associated with decreased expression by (CC excitifying mutations or deletions in a patient's genome that affect the cactivity of TCAPs by expressing inactive proteins or to supplement the CC patients own production of them. Additionally, (II) may be used to (CC eall culturing the cell to express the protein. (II) and its (CC complementary sequences may also be used as DNA probes in diagnostic (CC polymerase chain reaction (PCR) and hybridisation assays to detect and (CC quantitate the presence of similar nucleic acids in samples, and (CC anid in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies against TCAPs (CC and in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies may also be used considered in samples (e.g. by engyme linked immunosorbant assay (ELISA)). AAI28460 to AAI29512
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AAI29101
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Best Local !
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                                                                                                                                                                                                                                                                                                                                      Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 Χu J,
                                                                                                                                                                                                                                                                                                                                                             prevention,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-JUN-2000;
28-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-DEC-1999;
10-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colon tumour related determined cDNA sequence for clone CT2-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORI-) CORIXA CORP
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19-MAY-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-FEB-2000;
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                                                                                                                                                                                                                                                                                                                              25; Page 308; 472pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang T,
                                                                                                                                                                                                                                                                                                                                                             associated proteins diagnosis and treatm
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2000US-05194629
2000US-0519444
2000US-0575251
2000US-0609448
2000US-0649811
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Secrist H,
Jiang Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       py; diagnosis; colon cancer; colon tumour;
therapy; vaccine; colonic cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA; 441
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                                                                                                                                                                                                                                                                                                                                                            treatment
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Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37;
                                                                                                                                                                                                                                                                                                                                                         nucleic acids useful for of colonic cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                             DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 21;
6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Meagher MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                          Stolk JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                           29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                              Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs
                                                                                                                                                                                                                         WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                  (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                    09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                    28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                        07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                       EP1074617-A2
                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                        Human cDNA sequence SEQ ID NO:10713.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAH13782 standard; cDNA; 1628
                                                                                                                                                                                                                                                                                                                                                                                                                                            26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAH13782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and AAM24494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             701 ctacaaaaacttctacagtacaattgtcccactga 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95 ctacaaaacttctacagtacaattgtcccactga 129
                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in the
                                                                                                                                                                                                                                                                                                                                                                                                         primer;
                                                                                                                                                                                                                                                  Isogai T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                         Sugiyama T,
                                                                                                                                                                                                                                                                                  2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to AAM24523 represent nucleotide and amino acid sequences exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP; 127
                                                                                                                                                                                                                                                                                                             99JP-0248036
99JP-0300253
                                                                                                                                                                                                                                                                                                                                                                                                    detection; diagnosis; antisense therapy; gene therapy;
                                                                                                                                                                                                                                                 Nishikawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; 97 C; 114 G;
                                                                                                                                                                                                                                        hikawa T,
Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 35;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                        Hayashi K, ;
A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 102 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 22;
0.00037;
                                                                                                                                                                                                                                       Saito K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                   detection
by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
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The present invention describes primer sets for synthesising 5602 CC full-length cDNAs defined in the specification. Where a primer set CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary trand of a polynucleotide which comprises one of CC the 5602 nucleotide sequences defined in the specification, where the CC coligonucleotide comprises at least 15 nucleotides; or (b) a combination CC of an oligonucleotide comprising a sequence complementary to the CC complementary strand of a polynucleotide which comprises a 5'-end CC sequence and an oligonucleotide comprising a sequence complementary to a CC polynucleotide which comprises a 3'-end sequence complementary to a CC polynucleotide which comprises a 3'-end sequence, where the CC coligonucleotide comprises a 1 least 15 nucleotides and the combination of CC the 5'-end sequence/3'-end sequence is selected from those defined in CC the specification. The primers are useful for synthesising polynucleotides, or the primers are useful for synthesising polynucleotides, can be used in antisense therapy and CC particularly full-length cDNAs. The primers are also useful for the CC detection and/or diagnosis of the abnormality of the proteins encoded by CC cDNAs easily without any specialised methods. AAH03166 to AAH1362B and

Claim 8; SEQ ID 10713; 2537pp + CD ROM; English

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ARABOTE ARABOT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
portions of proteins which are associated with human colon tumours.

The invention also specifically discloses 8 human colon tumour proteins (AAB11897-B11904). The nucleic acids, the polypeptides they encode, and cantigen presenting cells (APCs, preferably dendritic cells) expressing such polypeptides may be used in vaccines that target tumour cells, cancer. T-cells specific for the polypeptide expressed by the APC are used to remove tumour cells from biological samples, especially blood or fractions thereof. The sample or the isolated T-cells specific for the polypeptide ean then be used to inhibit cancer development. CD4+ and/or CD8+ T-cells from a patient may be incubated with a polypeptide or nucleic acid of the invention, or an APC expressing such a polypeptide, to cause the proliferation of specific T-cells. The T-cells can be cloned and then administered back to the patient to inhibit cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-DEC-1998;
02-JUL-1999;
22-SEP-1999;
19-NOV-1999;
02-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1628 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAA77915 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New colon tumor polypeptides especially colon cancer, and progression of the cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200037643-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human colon tumour polypeptide; tumour antigen; immunotherapy; diagnosis; progression; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29 - JUN - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 29; Page 147; 229pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                    Sequences AAA77722-A78199 represent 478 cDNAs encoding proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-442671/38.
DB; AAB11903.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lodes MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yuqiu J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human colon tumour protein CT607,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0221298.
99US-0347496.
99US-0401064.
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99US-0454150
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Secrist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 35;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Benson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   348 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d to inhibit the development of diagnosing and monitoring the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      337 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 22; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Meagher MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancer; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ID NO:195
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
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                                                                                                                                                                                                                                                                                                                                                                            or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
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AAI28653

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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              development. Nucleic acids encoding the polypeptides and antibodies against the polypeptides may be used to determine the expression level of a tumour protein of the invention, and therefore to determine whether cancer cells are present. Such diagnostic methods may also be used to monitor the progression of a cancer by repeating the processes at time intervals, and comparing the current result to previous results. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-DEC-1999;
10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
19-MAY-2000;
29-JUN-2000;
28-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present sequence represents a cDNA encoding a human colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Colon tumour related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAI28653;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAI28653 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JUL-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-OCT-2001
                                                                                                                                                                                                                                                                                                          Colon tumor associated prevention, diagnosis a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-DEC-2000; 2000WO-US35596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunogenic;
                                                                                                                                                                                                                                                                                                                                                                                2001-441847/47
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunotherapy; diagnosis; colon cancer; colon tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Lodes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                        Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.7%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-0480321.
2000US-0504629.
2000US-0519444.
2000US-0575251.
2000US-0609448.
2000US-0649811.
                                                                                                                                                                                                                                                                                                                                                                                                              AMJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0476296
                                                                                                                                                                                                                                                                                                                                                                                                                        Secrist H,
Jiang Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; 101 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    determined cDNA sequence
                                                                                                                                                                                                                                                                                                            d proteins and nucleic act and treatment of colonic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 32; DB; Pred. No. 0.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    Benson DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>င့</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     colonic cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 21;
0.0053;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Meagher MJ,
                                                                                                                                                                                                                                                                                                                 acids useful for nic cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Stolk JA;
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the polynucleotides (II) that encode them. (I) have cytostatic activity.

(I) and (II) can be used in gene therapy and vaccine production. (I) and associated with inappropriate colon tumour associated protein (TCAP) expression, such as colonic cancer. For example, (I) and (II) may be used to treat disorders associated with decreased expression by rectifying mutations or deletions in a patient's genome that affect the activity of TCAPs by expressing inactive proteins or to supplement the patients own production of them. Additionally, (II) may be used to produce the TCAP proteins, by inserting the nucleic acids into a host

Claim 25; Page 187; 472pp; English

present invention describes colon tumour associated proteins (I) and

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RESULT 1
ANAI29076
ID ANAI29076
AX ANIZ
AX ANIZ
AX ANIZ
AX ANIZ
AX Hume
KW Hume
KW Immu
OX Homc
XX Hom
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-DEC-1999;
10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
19-MAY-2000;
29-JUN-2000;
28-AUG-2000;
The present invention describes colon tumour associated proteins (I) and the polynucleotides (II) that encode them. (I) have cytostatic activity. (I) and (II) can be used in gene therapy and vaccine production. (I) and (II) may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate colon tumour associated protein (TCAP) expression, such as colonic cancer. For example, (I) and (II) may be
                                                                                                                                                                                                                                                                                                                                                                                           King
                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                               Colon tumor associated proteins and nucleic acids useful prevention, diagnosis and treatment of colonic cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                       ŭ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell culturing the cell to express the protein. (II) and its complementary sequences may also be used as DNA probes in diagnostic polymerase chain reaction (PCR) and hybridisation assays to detect and quantitate the presence of similar nucleic acids in samples, and therefore which patients may be in need of restorative therapy. (I) may also be used as antigens in the production of antibodies against TCAPs and in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies and antagonists may also be used to down regulate TCAP expression and activity. The anti-(I) antibodies may also be used as diagnostic agents for detecting the presence of TCAPs in samples (e.g. by enzyme linked immunosorbant assay (ELISA)). AAI28460 to AAI29512 and AAM2494 to AAM24523 represent nucleotide and amino acid sequences given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W0200149716-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; immunotherapy; diagnosis; colon cancer; colon tumour; immunogenic; gene therapy; vaccine; colonic cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Colon tumour related determined cDNA sequence for clone CT607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-DEC-2000; 2000WO-US35596
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-OCT-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAI29076 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 421
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                                                                                                                                                                                                                                                                                                                                       2001-441847/47.
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                                                                                                                                                                                                                                                                                                                                                                                      Lodes MJ,
E, Wang T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ch 0.7%;
l Similarity 100.0%;
32; Conservative (
                                                                                                                                                                                             Page 300; 472pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0480321
2000US-0504629
2000US-0519444
2000US-0575251
2000US-0609448
2000US-0649811
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0476296
                                                                                                                                                                                                                                                                                                                                                                                                                 Secrist
                                                                                                                                                                                                                                                                                                                                                                                      Jiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA; 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                , Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 32;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                              Benson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.
B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    other;
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                                                                                                                                                                                                                                                                                                                                                                                                         Stolk JA;
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CCCXX
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cc used to treat disorders associated with decreased expression by crectifying mutations or deletions in a patient's genome that affect the cc activity of TCAPs by expressing inactive proteins or to supplement the CC patients own production of them. Additionally, (II) may be used to CC produce the TCAP proteins, by inserting the nucleic acids into a host CC cell culturing the cell to express the protein. (II) and its CC complementary sequences may also be used as DNA probes in diagnostic CC polymerase chain reaction (PCR) and hybridisation assays to detect and CC quantitate the presence of similar nucleic acids in samples, and CC therefore which patients may be in need of restorative therapy. (I) may CC and in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies against TCAPs CC and in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies may also be used to down regulate CC cas diagnostic agents for detecting the presence of TCAPs in samples and antagnostic agents for detecting the presence of TCAPs in samples CC (e.g. by enzyme linked immunosorbant assay (ELISA)). AAIZ8460 to AAIZ9512 CC qiven in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                   Primer sets for synthesizing full-length cDNAs defined in and/or diagnosis of the abnor full-length cDNAs.
                                                                                                                                                                                                                                                   29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                  Ota T,
Ishii :
                                                                                                                                        WPI; 2001-318749/34.
                                                                                                                                                                                                            (HELI-)
                                                                                                                                                                                                                                                                                                                     28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                 07-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                             EP1074617-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAH03594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH03594 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346 atacatggagttgatattacaaccagtgacac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           617 atacatggagttgatattacaaccagtgacac 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 100.
es 32; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA clone
                                                                                                                                                                                 Isogai T,
                                                                                                                                                                                                          HELIX RES INST
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                                                                                                                                                               Sugiyama
                                                                                                                                                                                                                                  ; 99JP-0248036.
; 99JP-0300253.
; 2000JP-0118776.
; 2000JP-0183767.
; 2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (5'-primer) SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109 A; 101 C; 125 G; 86 T; 0 other;
                                                                                                                                                                 Nishikawa
T, Wakama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.7%;
                                                                                                                                                                 Wakamatsu
                                                                         izing polynucleotides, particularly the 5602 ed in the specification, and for the detecti abnormality of the proteins encoded by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                              7,
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Pred. No.
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                                                                                                                                                                              Hayashi K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NO:429
                                                                                                                                                               Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                            antisense therapy; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               377
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0.0053;
                                                                                                                                                              Salto K,
Otsuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 421;
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                                                                                                                                                               Yamamoto
T;
                                                                          detection by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                          therapy;
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The present full-length

invention describes primer cDNAs defined in the special

primer sets for specification.

for

synthesising Where a prime

sising 5602 b primer set

Claim 1; SEQ ID 429; 2537pp + CD

ROM;

English.

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CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary cc to the complementary strand of a polynucleotide which comprises one of coligonucleotide comprises at least 15 nucleotides; or (b) a combination complementary strand of a polynucleotides; or (b) a combination complementary strand of a polynucleotide which comprises a 5 end cc sequence and an oligonucleotide comprising a sequence complementary to the cc sequence and an oligonucleotide which comprises a 5 end cc polynucleotide which comprises a 1 end sequence, where the cliponucleotide which comprises and the combination of cc the 5'-end sequence', end sequence omplementary to a coligonucleotide comprises at least 15 nucleotides and the combination of cc the specification. The primer sets can be used in antisense therapy and cc particularly full-length cDNAs. The primers are also useful for the cc particularly full-length cDNAs. The primers are also useful for the full-length cDNAs. The primers are also useful for the compass easily without any specialised methods. AAH03166 to AAH13632 and CC AAH13633 to AAH13642 represent human cDNA sequences; AAB92446 to CC CAB95893 represent human amino acid sequences; AAB92446 to AAH13632 crepresent invention.
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 848 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          colorectal carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH33568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH33568 standard; cDNA; 653
   AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human colon cancer-associated nucleic acid molecules (N) and proteins (P), where the proteins are collectively known as colon cancer antiqens. The colon cancer antiqens have cytostatic activity and can be used in gene
                                                                                                                                                                                                                                                                                                29-SEP-1999;
03-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                      WO200122920-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       385
                                                                                                                                                                                                                                                                                                                                                 28-SEP-2000; 2000WO-US26524.
                                                                                                                                                                                                                                                                                                                                                                                    05-APR-2001
                                                                                                                        useful for
                                                                                                                                        Nucleic acids encoding
                                                                                                                                                                                                                                                           (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aaatatacagaaagaagttggaaatggagaa 416
                                                                                                                                                                                          2001-235357/24.
                                                                                                                                                                                                                            X.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            colon cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                           AAG74137
                                                                                       Page
                                                                                                                        preventing,
                                                                                                                                                                                                                            Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cancer antigen encoding cDNA SEQ ID NO:624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                       2661; 9803pp;
                                                                                                                                                                                                                                                                                                99US-0157137.
99US-0163280.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SS.
                                                                                                                        4277 human colon diagnosing and/or
                                                                                                                                                                                                                            Birse CE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer antigen; diagnosis; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                       English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 32;
Pred. No.
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                                                                                                                        and/or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G; 191 T; 4 other;
                                                                                                                                                                                                                              Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.0
B
                                                                                                                      cancer-associated polypeptides,
r treating colorectal cancers -
                                                                                                                                                                                                                              CA;
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RESULT 17
AAZ16317
ID AAZ16317
XX
AC AAZ16:
XXX Human
XXX Human
XXW Human
XXW Getee
XXX Homc
XXY Gene
XXX Homc
XXX Homc
XXX Homc
XXX Homc
XXX Homc
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Best Local S
Matches 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1517 aaagaagatatgcttcttaaacaaggtca 1545
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N.B. Pages 666 to 682 and page 7053 of the missing at time of publication, meaning no SEQ ID NO:1027 to 1052, 7921 and 7922.
                                                                                                                                                                                                                     Escobedo J, (
Jones WL, Kas
Lamson G, Les
Stache-Crain I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-JAN-1998;
24-FEB-1998;
31-MAR-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                detection;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-OCT-1999
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                                                                                                                                                                                                                                                                                                                    Crkvenjakov R,
                                                                                                                                                                                                                                                                                                                                                                 (CHIR ) CHIRON COF
(HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                           03-APR-1998;
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29; Conserv
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                                                                                                                                                                                            R, Dickson M, Drmanac R, Dickson MA; Garcia PD, Garcia V, Giese K, Innis MA; Garcia PD, Garcia V, Gita D, Labat I; Kassam A, Kennedy GC, Kita D, Labat I; Kassam A, Kennedy GC, Kita D, Pot D, Randazzo F, Reinhar LT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mapping;
                                                                                                                                                                                                                        Leshkowitz D, Pot D,
in B, Sudduth-Klinger
                                                                                                                                                                                                                                                                      Kassam A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene expression product; diagnosis; therapy; probe;
apping; tissue typing; profiling; forensic; cancer;
ysis; colorectal cancer; breast cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP; 216 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0080666.
98US-0072910.
98US-0075954.
98US-0080114.
98US-0080515.
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Pred. No.
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; LT;
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                                                                                                                                                                                                                                                                                                    Innis MA;
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Novel human genes and their differentially expressed in

n products which cell types

Claim 1;

Page 1804;

2479pp;

English. expression different

present

invention

describes a library

of human polynucleotides

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    comprising the sequences given in AAZ12532 to AAZ17779. Also described is a method of detecting differentially expressed genes correlated with the Cancerous state of a mammalian cell, comprising detecting at least one differentially expressed gene product in a test sample from a cell country of the S248 polynucleotide sequences given in AAZ12532 to AAZ1779. The CC polynucleotides can be used as a source of primers and probes, which can be used for a variety of purpose, e.g. detection of expression levels, can be used for raising antibodies for experimental, diagnostic and cc mapping, tissue typing or profiling, forensics, genetic analysis and cc detection of polymorphisms. Polypeptides encoded by the polynucleotides can be used for raising antibodies for experimental, diagnostic and therapeutic purposes. The polynucleotides may also be used to construct arrays for diagnostics (which may be used to determine function of an cencoded protein); and to detect differences in expression levels between two cells (e.g. to identify abnormal or diseased tissue in a human, to construct predisposition or susceptibility to a disease such as cancer). The polynucleotides of the invention are especially used in the cancer. The polynucleotides can also be used to screen for cand lung cancer. The polynucleotides can also be used to screen for each period analogues and antagonists.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                  Novel human secreted proteins useful for diagnosis, prevention and treatment of disorders including neurological, cell proliferative, cardiovascular, autoimmune and inflammatory disorders and microbial
                                                                                                                                                                                                                             12-MAR-1999;
03-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                              Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidiabetic; antiinflammatory; antiulcer; vulnerary; anticonvulsant; antibacterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder;
                                                                                                              P-PSDB; AAB34239
                                                                                                                                                              Rosen
                                                                                                                                                                                                                                                                         09-MAR-2000; 2000WO-US06044.
                                                                                                                                                                                                                                                                                                                                                                                                         cardiant; gene therap; neurological disease;
                                                                                                                                                                                            ( HUMA - )
                                                                                                                                                                                                                                                                                                                                          W0200055352-A2
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                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
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                                                                                                                                                            CA, Ruben SM,
                                                                                                                                                                                           HUMAN GENOME
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP;
                                                                                                                                                                                                                         99US-0124099.
99US-0168661.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein cDNA sequence
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                                                                                                                                                                                         SCI INC
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                                                                                                                                                          Komatsoulis
                                                                                                                                                                                                                                                                                                                                                                                                       infection;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                human; secreted protein; ss
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Claim 1; Page 331; 383pp; English

(CURA-) CURAGEN CORP

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AAC77460,
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(W vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective;
(W anticonvulsant; osteopathic; antiarthritic; immunosuppressant; cardiant;
(W immunostimulant; thrombolytic; coagulant; vasotropic; antidabetic;
(W hypotensive; dermatological; immunosuppressive; antiinflammatory;
(W antiviral; antibacterial; antifungal; antirheumatic; antithyroid;
(W antiviral; antibacterial; antifungal; antihingamatory;
(M cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS;
(W cholesterol ester storage; systemic lupus erythematosus; infection;
(W cholesterol ester storage; systemic lupus erythematosus; infection;
(W severe combined immunodeficiency; malaria; autoimmune disorder; asthma;
(W allergy; aplastic anaemia; nocturnal haemoglobinuria; burn; wound;
(W bone damage; cartilage damage; antiinflammatory disease; coagulation;
(W thrombosis; contraceptive; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to the isolation of genes AAC59507-C59556 encoding CC 50 human secreted proteins by linking to the gene for the human cc generate fusion proteins by linking to the gene for the human cc generate fusion proteins by linking to the gene for the human cc immunoglobulin G Fc portion (AAC59498) for increasing the stability of the fusion protein as compared to the human protein only. The genes and cc proteins are useful for preventing, ameliorating or treating medical cc conditions, e.g. by protein or gene therapy. The genes are isolated cc from a range of human tissues disclosed in the specification. The cnicleic acids, proteins, antibodies and (ant)agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast cand ovarian cancer, and other cancers of the adrenal gland, bone, bone cc marrow, breast, gastrointestinal tract, liver, lung, or urogenital; cc marrow, breast, gastrointestinal tract, liver, lung, or urogenital; cc marrow, breast, gastrointestinal tract, liver, lung, or urogenital; cc disease, multiple sclerosis, rheumatoid arthritis and ulcerative colitis; (c) cardiovascular disorders such as myocardial ischaemias; (d) cepilepsy; and (f) infectious diseases a.g. cerebral anoxia and cepilepsy; and (f) infectious diseases such as viral, bacterial, fungal and parasitic infections.
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Best L
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                                                          31-MAR-1999;
02-APR-1999;
05-APR-1999;
30-MAR-2000;
                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                       31-MAR-2000;
                                                                                                                                                                                                                   05-OCT-2000.
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                                                                                                                                                                                                                                                               WO200058473-A2
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                                                       ; 99US-0127607.
; 99US-0127636.
; 99US-0127728.
; 2000US-0540763.
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; Pred. No.
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15;
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Best Local S
Matches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antithyroid; and antianaemic. The sequences can be used for determining the presence of or predisposition to, or preventing or treating pathological conditions associated with an OREX-associated disorder. The nucleic acids can be used to express OREX proteins in gene therapy vectors. The proteins and nucleic acids may be used to treat cancers, proliferative disorders, neurodegenerative disorders, osteoarthritis, graft vs host disease, cardiovascular disease, diabetes mellitus; systemic lupus hypertension, hypothyroidism, cholesterol ester storage, systemic lupus erythematosus, severe combined immunodeficiency (SCID), AIDS, viral, bacterial or fungal infection, malaria, autoimmune disorders, asthma, allergies, aplastic anaemis, burns, wounds, bone and cartilage damage, nocturnal haemoglobinuria, antiinflammatory disease; to enhance coagulation; to inhibit thrombosis; and as a contraceptive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  which represent the human ORFX open reading frames 1 to 3161. The ORFX sequences have activities such as: cytostatic; hepatotropic; vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective; osteopathic; anticonvulsant; antiarthritic; immunosuppressant; immunostimulant; cardiant; thrombolytic; coagulant; vasotropic; antidiabetic; hypotensive; dermatological; immunosuppressive; antiinflammatory; antibacterial; antiviral; antifungal; antirheumatic; antiinflammatory; antibacterial; antiviral; antifungal; antirheumatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel nucleic acids and peptides derived from open reading useful for treating e.g. cancers, proliferative disorders, neurodegenerative disorders and cardiovascular disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC74446 to AAC77606 encode the proteins given in AAB40237 to AAB43397, which represent the human ORFX open reading frames 1 to 3161. The ORFX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 5; Page 5211-5212; 5507pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shimkets RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; secreted protein; fusion protein; gene therapy; protein therapy; diagnosis; tissue; cancer; tumour; neurodegenerative disorder; leukaemia; developmental abnormality; foetal deficiency; blood; allergy; renal; ds; immune system; asthma; lymphocytic disease; brain; hepatic; lymphoma; inflammation; ischaemic shock; Alzhelmer's disease; restenosis; AIDS; cognitive disorder; schizophrenia; prostate; obesity; osteoclast; thymus; osteoprosis; arthritis; testis; lung; thyroiditis; thyroid; digestion; endocrine; metabolism; regulation; malabsorption; gastritis; neoplasm.
                                                                                                                                                                                                                                                                                                                                                                                                                30-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAX84935 standard; DNA; 1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1350 BP; 262 A; 379 C; 429 G;
                                                                                                                                                                                                                                                                                                                                                                             Human secreted protein gene No.
    17-NOV-1997;
                                         04-NOV-1998;
                                                                                20-MAY-1999
                                                                                                                        W09924836-A1
                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000-602362/57.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23;
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                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Leach
                                           98WO-US23435.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
15;
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Query Match Best Local Matches 2

Similarity

100.0%;

0;

Mismatches

0

0

Gaps

0;

0.5%;

Score 23; Pred. No.

DB 20; 14;

Length 1589;

Conservative

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This sequence represents a nucleic acid molecule which encodes a CC secreted human protein. The gene number is given in the descriptor line. CC The gene can be used to generate fusion proteins by linking to the gene CC to a human immunoglobulin FC portion (e.g. AAX84924) for increasing the CC stability of the fused protein as compared to the human protein only. CC The invention relates to 125 novel genes and their fragments (nucleic The invention relates to 125 novel genes and their fragments (nucleic Which are useful for preventing, treating or ameliorating medical CC conditions e.g. by protein or gene therapy. Also, pathological CC conditions can be diagnosed by determining the amount of the new CC conditions can be diagnosed by determining the amount of the new polynucleotides. Specific uses are described for each of the 125 CC polynucleotides, based on which tissues they are most highly expressed in CC conditions can be described uses are described for each of the 125 CC polynucleotides, based on which tissues they are most highly expressed in CC conditions can be described uses).
                                                                                                                                                                                                                                                                                                                                                                                                                        Carter KC, Lunck
Kyaw H, Lafleur DW,
Kyaw H, Shi Y, So
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-NOV-1997;
07-NOV-1997;
07-NOV-1997;
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07-NOV-1997;
07-NOV-1997;
07-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-NOV-1997;
17-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-NOV-1997;
                                                                                                                                                                                                                                                                                                                            New human secreted proteins and coding sequences useful for treating disorders of the immune system and hyperproliferative disorders
                                                                                                                                                                                                                                                                                                                                                                               WPI; 1999-337740/28.
P-PSDB; AAY27569.
                                                                                                                                                                                                                                                                                             Claim 1; Page 283; 507pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HUMA-) HUMAN GENOME
Sequence 1589 BP; 359 A; 379 C; 361 G; 478 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             L7-NOV-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0064900
97US-0064911
97US-0064911
97US-0064912
97US-0064983
97US-0064984
97US-0064985
97US-0064988
97US-0066980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-0066094.
97US-0066095.
97US-0066089.
                                                                                                                                                                                                                                                                                                                                                                                                                                   R, Endress GA, Feng
W, Moore PA, Ni J,
Soppet DR, Wei Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Olsen HS,
         12 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rosen CA;
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RESULT 2
ANV64625
ID AAV64625
XX AAV6
XX AV6
XX TOMB
X
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Best Local :
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                                                                                                           Lycopersicon
                                                                                                                                                               Lycopersicon
                                                                                                                                                                                          carbohydrate
                                                                                                                                                                                                                       Tomato;
                                                                                                                                                                                                                                                                              Toma to
                                                                                                                                                                                                                                                                                                                               02-MAR-1999
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                                                                                                                                                                                                                                                                                                                                                                                         AAV64625
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAV64625 standard; cDNA; 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1866 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes isolated polynucleotides and encoding and representing the enzymes cinnamate 4-hydroxylase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 89; 213pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotide encoding enzymes involved in lignin-biosynthetic pathway useful for producing transgenic plants especially eucalyptus and pine species having altered lignin content, composition and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-OCT-1998;
14-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-OCT-1999;
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                                                                                                                                                                                                                                                                     fructokinase (Frk1) cDNA.
                                                                                                                                                 Potato; fructokinase; regulatory sequence; ripening; drate metabolism; transgenic plant; expression cassett sicon esculentum; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĽN,
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                                                                                                        esculentum
                                                                                                                                                                                                                                                                                                                         (first entry)
                       Location/Qualifiers
271..1314
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99US-0143811.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414 A;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      515 C;
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Pred. No.
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14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1866;
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                                                                                                                                                                                 cassette;
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                                                                                                                                                                                                           fruit;
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XXX ACCORD DE CONTROL OF CONTROL 
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AAA49439
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Best Local S
Matches 23
                                  WPI; 2000-423412/36
                                                                                                            Hruska K;
                                                                                                                                                                                                                                                   05-DEC-1998;
10-DEC-1998;
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                                                                                                                                                                          (BARN-) BARNES-JEWISH HOSPITAL
                                                                                                                                                                                                                                                                                                                                                               03-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cation channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-SEP-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The introduction of an expression cassette containing an exogenous Frkl (fructokinase) sequence, is used to modify sweetness and promote starch biosynthesis in transgenic plants, particularly tomato. Expression of FrkI in sense or antisense orientation inhibits conversion of fructose to its 6-phosphate, increasing sweetness. Overexpression of fructose trouble fruction in the sense of the sens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New fructokinase gene from tomato - useful for, e.g. inhibiting fructokinase activity for increasing sweetness or stimulating s biosynthesis in plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1906 BP; 515
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P-PSDB; AAW81785.
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98US-0111676.
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09-JUL-2000;
19-JUL-2000;
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P-PSDB; AAM38910.
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                                                                        Novel nucleic acids and
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23; Conserv
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                                       central nervous
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20000S-0598042.
20000S-0520312.
20000S-0653450.
20000S-0662191.
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20000S-0727344.
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ı Z,
u P,
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Wehrman T,
                                                                                                                                                                                                                                                  Goodrich R,
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                                       polypeptides, useful for treating disorders
system injuries -
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Pred. No.
                                                                                                                                                                                                                                                                                                                    Chen
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Xu C,
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Xue
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Yang Y,
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Zhang
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                                                                                                                                                31-JAN-2000;
04-FEB-2000;
02-MAR-2000;
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                                                                                                                                                                                                                                                                                                                                                                            dermatological; immunosuppressive; antiinflammatory; antibacterial; anti-HIV; antiparkinsonian; antisickling; antianemic; antiarthritic; antipheumatic; virucide; hepatotropic; cerebroprotective; vulnerary;
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                                                                                                                                                                                                                                                                                                                                        Homo
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human serine/threonine phosphatase encoding cDNA (clone
                                                                                                                                                                                                      17-JAN-2001;
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                                                    P-PSDB;
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Novel proteins of serine/threonine phosphatase family, useful for diagnosing, treating, preventing and/or prognosing disorders related to the proteins, including cancer, immune response and neuronal disorders

Claim

1; Page 424-425; 441pp; English.

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RESULT 26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CC The invention provides serine/threonine phosphatase family polypeptides and polynucleotides encoding them. The polypeptides, polynucleotides and combinant methodology. The polypeptides, polynucleotides and combinance are useful for disgnosis, prognosis, prevention and treatment combination of neurodegenerative disorders, infectious diseases, autoimmune combination of neurodegenerative disorders, described and isorders, cardiovascular disorders, cerebrovascular disorders, repaid disorders, cerebrovascular combination and treatment combination of the diseases that can be treated). They are also concentrations, to accelerate recovery of immunosuppressive agents, stimulator componentrations, to accelerate recovery of immunocompromised individuals, concentrations, to accelerate recovery of immunocompromised individuals, concentration in pathologies as an agent to increase serum immunoglobulin concentration in pathologies e.g. AIDS, and/or common variable immuno deficiency. The polypeptides and polynucleotides are useful to prevent concentration of hemopoletic cells and bone marrow calls, for components of collections and/or remanalian metabolism to change a mammal's mental or physical state, and as food additive or preservative. The present color and sequence represents a human serine/threonine phosphatase encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
           WPI; 1999-205193/17
                                                                                                                                          02-SEP-1998;
                                                                                                                                                                                                                                                            prenatal diagnosis; angloedema; antihypertensive agent; atherosclerosis; arterial stenosis; industrial protein feed; malabsorption syndrome; proteinaceous waste degradation; additive; immunohistochemistry; ss.
                                                                                                                                                                                                                                                                                                                                            Human kidnéy aminopeptidase P genomic DNA fragment 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4708 tccatcaaaaaaaaaaaaaaa 4730
                                                                                                                                                                            11-MAR-1999
                                                                                                                                                                                                         WO9911799-A2
                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                        Aminopeptidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAX23520 standard;
                                                                                                                                                                                                                                                                                                                                                                                     23-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4302 BP; 1259 A; 895 C; 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                              W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tccatcaaaaaaaaaaaaaa 4301
                                                                         MEDICAL COLLEGE
                                          Sprinkle TJC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                        97US-0057854
                                                                                                                                        98WO-US18426
                                                                                                                                                                                                                                                                                                                    human; AmP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.5%;
                                                                         GEORGIA RES
                                       Venema
                                                                                                                                                                                                                                                                                                            gene therapy; treatment; Amp-deficiency;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                          RC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G; 1238 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
13;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 4302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
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RESULT 27
AAV83939
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CC (AmP). This protein is used to produce recombinant AmP and can be used CC (AmP). This protein is used to produce recombinant AmP and can be used CC for gene therapy for treating AmP-deficiency conditions. Its fragments CC are used as primers and probes to identify patients with homozygous and theterozygous AmP deficiency, including prenatal diagnosis (patients CC defective in AmP are at risk of developing angloedema if treated with CC anglotensin-converting enzyme inhibitors), also as antisense inhibitors CC in cases of excessive AmP expression. The product of the invention is CC also used to identify AmP-expressing sequences in other animals and to generate transgenic animals, and comparisons of genomic sequences are CC used to detect mutations. AmP inhibitors are potentially useful as CC anthypertensive agents and to prevent or treat arterial (re)stenosis CC anthypertensive agents and to prevent or treat arterial (re)stenosis CC inido bonds, can be used to degrade for a minus protein feeds to free CC amino acids, to degrade proteinaceous wastes, as additives in enzyme CC inido acids, to degrade proteinaceous wastes, as additives in enzyme CC inido acids, to treat malabsorption syndrome and for studying its Diological role. Antibodies against AmP are used in immunohistochemical CC methods to study AmP distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated nucleic acid comprising neocentromere sequences from eukaryotic chromosome - used to produce replicable, segregating artificial chromosomes that can carry large amounts of DNA for generalizations.
                                                                                                                              Cancilla
                                                                                             WPI; 1999-009773/01.
                                                                                                                                                             (AMRA-) AMRAD
                                                                                                                                                                                              26-AUG-1997;
13-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                             cell division;
                                                                                                                                                                                                                                               13-MAY-1998;
                                                                                                                                                                                                                                                                              19-NOV-1998
                                                                                                                                                                                                                                                                                                               W09851790-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                   HC-contig derived from normal human chromosome 10q25.2 region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAV83939 standard; DNA; 80595
                                                                                                                                                                                                                                                                                                                                                НОШО
                                                                                                                                                                                                                                                                                                                                                                                                                         Yeast artificial chromosome; YAC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 45546 BP; 12027 A; 11359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleic acid encoding human aminopeptidase
                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                            artificial chromosome;
                                                                                                                              MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first_entry)
                                                                                                                            Choo K,
                                                                                                                                                             OPERATIONS PTY LTD
                                                                                                                                                                                             97AU-0008791.
97AU-0006784.
                                                                                                                                                                                                                                           98WO-AU00352.
                                                                                                                                                                                                                                                                                                                                                                                          artificial chromosome;
                                                                                                                                                                                                                                                                                                                                                                                                         replication;
                                                                                                                            Du Sart D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201pp; English
                                                                                                                                                                                                                                                                                                                                                                                      ; YAC; probe; eukaryotic chromosome;
extra-chromosomal element; segregat
hromosome; gene therapy; mardel(10);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΒP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; 11380 G; 10780 T; 0 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 45546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                     nt; segregation;
mardel(10);
10; 10q25.2; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
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Claim

8

Fig

6; 540pp;

English

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The present sequence represents the HC-contig derived from normal human chromosome 10, 10q25, 2 region. This region can be naturally mutated to CC produce an unusual chromosomal marker referred to as mardel(10). The CC mardel(10) marker is mitotically stable and contains a functional CC neocentromere at a location regarded as non-centromeric. This CC neocentromere maps to q25,2 on chromosome 10. The specification describes CC nucleit acid sequences derived from a eukaryotic chromosome, including a neocentromere or its functional derivative or hybrid, that are able, in a compatible cell, of replicating, acting as extra-chromosomal element CC and segregating during cell division. The sequences can be used to creplicable, segregating nucleic acid that confers a specific phenotype CC construct artificial chromosomes for use in gene therapy comprising a CC replicable, segregating nucleic acid that confers a specific phenotype CC carry large amounts of DNA (e.g. therapeutic genes), and, being CC extra-chromosomal, they are not mutagenic. The artificial chromosomes CC are also useful for generation of transgenic plants and animals, in CC expression of cytokines, receptors and growth factors, or to increase the copy number of a gene in a cell. The constructs may also be constructs and structural analysis of chromosomes.
RRESULT 2
AAT692A
AAT692A
ID AAT6
AC AAT6
AC AAT6
XX AAT6
AC AAT6
XX Oper
KW Oper
KW ampl
KW mult
XX Synt
OS Homm
OS Hom
OS Hom
OS 29-1
XX 29-1
PF 21-1
PF 21-1
PF 21-1
XX Unif
PT acti
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25198 tccatcaaaaaaaaaaaaaaa 25220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4708 tccatcaaaaaaaaaaaaaa 4730
                                                Unimolecular segment amplification method for amplifying nucleic acids - uses rolling circle mechanism of amplification, useful for disease-associated genetic mutation(s)
                                                                                                                                                                                                                                                                                                                                                                                                                                           Open circle probe; rolling circle replication primer; mutation damplification target circle; unimolecular segment amplification; multiple target detection; circular DNA; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT69845 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 80595 BP;
                                                                                                                                                                                                                               01-MAY-1996;
21-NOV-1995;
                                                                                                                                                                                                                                                                                                                                                                                                          Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Address probe #2 for mutant ornithine transcarbamylase gene
                                                                                                                                                          Caplan
                                                                                                                                                                                                                                                                                     21-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                          W09719193-A2
                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                        WPI; 1997-298125/27.
                                                                                                                                                                                           (UYYA ) UNIV YALE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Έ,
                                                                                                                                                          Lizardi PM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                               96US-0016677.
95US-0563912.
                                                                                                                                                                                                                                                                                     96WO-US18812.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23183 A; 16613 C; 16824 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23975 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 80595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      detection;
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CC AAT69845 and AAT69846 are address probes for mutant and wild type CC ornithine transcarbamylase, respectively. These sequences were used to test the method of the invention. The method of the invention is for CC amplifying a nucleic acid molecule. It comprises mixing at least one CC rolling circle (ATC) which comprises a single stranded circular DNA CC target circle (ATC) which comprises a single stranded circular DNA CC target circle (ATC) which comprises a single stranded circular DNA CC the CC polymerase and incubating such that a tradem sequence DNA is formed. The CC method, designated unimolecular segment amplification, is used for CC detecting specific sequences with high speed and sensitivity. It is CC especially useful for detecting mutations in genes where numerous and coultiple genes are involved. The method is isothermal and provides a simple, consistent and quantitative detection of multiple target CC molecules as the amplification occurs not in cycles but as a single CC amplification step is linear and is catalysed by a highly processive
Sequence
    29
    BP;
    Α.
       0
    Ç
       σ
       <u>ن</u>
       18 T;
         0 other;
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Query Match Best Local S Matches 22 4708 tccatcaaaaaaaaaaaaaa 4729 22 TCCATCAAAAAAAAAAAAAAAA 22; Similarity Conservative 0.5%; 0 Score 22; Pred. No. Mismatches DB 18; 0 Length 29 Indels 0 Gaps

0;

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RESULT AAH81892/c Differential transcription; human; rat; tumour cell; cytostatic; Ras modulator; Class II tumour suppressor gene; gene therapy; ss 21-SEP-2001 AAH81892; AAH81892 Ras modulator; Class Rat differential transcription-associated cDNA SEQ ID 29 standard; (first entry) DNA; 255 **9**P 401

Rattus

WO200157058-A2

09-AUG-2001

31-JAN-2001; 2001WO-EP01003

31-JAN-2000; 2000DE-1004102

(META-) METAGEN GES GENOMFORSCHUNG MBH.

A, Hinzmann Hellriegel M, В, Schmefer R, Zuber J, Schmitz A, Sers C; Tchernitsa

0

WPI; 2001-483415/52.

Nucleic acids differentially expressed useful for diagnosis or therapy of tumo tumors and for tumor and not for screening normal cells, ing active

Claim 6; Page 490; 579pp; German.

This invention describes a nucleic acid (I) with differential expression between tumour and normal cells and which has cytostatic activity. (I) work as modulators of Ras activity by inducing expression of tumour suppressor genes. (I), and polypeptides encoded by them, are useful as targets for diagnosis or therapy and in screening to determine the

Example 4; Page 79; 149pp; English

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AAA41967
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                         expressed sequence tag; EST; probe; chemotactic; proliferative; immunomodulatory; haematopoletic; chemokinetic; analgesic; haemostatic; thrombolytic; antiinfiammatory; cytostatic; antibacterial; antiinfiammatory; cytostatic; antibacterial; antiingal; antiviral; antiinfiammatory; cytostatic; antibacterial; antiingal; antiviral; antiinfiammatory; cytostatic; antipackinsonian; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; altergic condition; insulin dependent disbetes; asthma; myeloid cell deficiency; ulcer; central nervous system disorder; Alzhelmer's disease; stroke; parkinson's disease; Huntington's disease; coagulation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease;
                                                              Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sBSTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders.
                                                                                                                                      WPI; 2000-317937/27.
                                                                                                                                                                      Merberg D,
                                                                                                                                                                                                                                                15-OCT-1998;
                                                                                                                                                                                                                                                                             15-OCT-1999;
                                                                                                                                                                                                                                                                                                             20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         effects of an active compound (potential pharmaceutical) on a cell line, particularly for diagnosis and treatment of tumors, especially by modulating expression of (I) (by gene therapy, antisense RNA or ribozyme methods) or by modulating the amount and/or location of (I)-encoded polypeptides (by administration of the polypeptide or its activator, antibody (optionally as a conjugate) or inhibitor). The method allows identification of many class II tumour suppressor genes (i.e. genes that ARH81492-AAH82376 represent the human and rat derived nucleic acid. fragments described in the method of the invention.
                                                                                                                                                                                                                (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                             WO200021990-A1
                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4709 ccatcaaaaaaaaaaaaaaaaa 4730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human secreted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAA41967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAA41967 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 255 BP; 71 A; 39 C; 72 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38 CCATCAAAAAAAAAAAAAA 17
                                            ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mouse; xenopus; rat; secreted expressed sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        o.5%;
Similarity 100.0%;
22; Conservative (
                                       Page 316; 618pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                    infection; depression; psoriasis; ss.
                                                                                                                                                                  McCoy JM,
Treacy M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                              9805-0104435
                                                                                                                                                                                                                                                                             99WO-US24205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   expressed sequence tag SEQ ID NO:707.
                                                                                                                                                                                   Lavallie
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Pred. No.
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                                                                                                                                                                                Collins-Racie LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73 T; 0 other;
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AAA41261

sequence

to AAA43419 represent specifically claimed secreted expressed tags (SESTS), isolated from human, mouse, xenopus and rat

Claim 1; Page 179; 263pp;

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RESULT 3
AAA06471/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cc cytostatic; antibacterial; antifunal, antifural; antifunatory; cc antiasthmatic; vulnerary; antifuler; osteopathic; neuroprotective; cc antiasthmatic; vulnerary; antifuler; osteopathic; neuroprotective; cc anticonvulsant; and antidepressant. The sESTs can be used for gene cc therapy and in vaccines. The sESTs are useful as probes for the ct therapy and in vaccines. The sESTs. Proteins encoded by the sESTs cc useful as probes for the cc useful in assays for determining biological activity and raising cc antibodies. They may be useful for treatment of autoimmune disorders (multiple sclerosis, insulin dependent disbetes), allergic conditions cc (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, costeoporosis, osteoarthritis, central nervous system disorders (cc disorders (haemophilia, thrombosis), inflammatory disorders (crohn's disease), tumours, bacterial, fungal or viral infections, depression and contrains of the exemplification of the present linker variants which are given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                  14-JUL-1998;
14-JUL-1998;
23-SEP-1998;
23-SEP-1999;
15-JAN-1999;
15-JAN-1999;
09-APR-1999;
                       comprises an immunogenic
                                      New polypeptide useful
                                                                   WPI;
                                                                                              Dillon
                                                                                                                        (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                            Human; prostate cancer; diagnosis; tumour; gene therapy; detection;
immunogenic; cytostatic; vaccine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                              Human immunogenic prostate tumour protein cDNA sequence SEQ ID NO:238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2237 aaatttgaaaacatgaagagct 2258
                                                                                                                                                                                                                                                                                           27-JAN-2000
                                                                                                                                                                                                                                                                                                                     WO200004149-A2
                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                             13-JUN-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA06471 standard; cDNA;
                                                                                                                                                                                                                                                                14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tissue sources. The sESTs can have a range of activities depending on the tissues they were isolated from. The activities include: chemotactic; proliferative; immunomodulatory; haematopoietic; chemokinetic; analgesic; haemostatic; thrombolytic; antlinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154 aaatttgaaaacatgaagagct 175
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the exemplification of the present invention.
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                                                                                                                                                980S-0115453.
980S-0116134.
980S-0159812.
980S-0159822.
980S-0159822.
990S-0232149.
990S-0232880.
990S-02388946.
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                    for treating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.5%; Score 22;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                          vaccine; ss.
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                    diagnosing state tumor
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                    prostate cancer
protein -
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes isolated polypeptides, comprising an immunogenic portion of a prostate tumour protein (PTP). The polypeptides and polynucleotides encoding them have cytostatic activity and can be used in vaccines and in gene therapy. The polypeptides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; prostate cancer; prostate-specific; diagnosis; vaccine; cytostatic; gene therapy; metastasis; ss.
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                        The present invention describes polynucleotide sequences (I) which encode prostate-specific proteins (II). (I) and (II) have cytostatic activity, and can be used in vaccine production and gene therapy. (I), (II) antibodies to (II), fusion proteins comprising (II), and isolated T cells prepared using (I) or (II) are used treat cancer in a patient. (I) and the antibodies are also used in the detection of cancer in a patient. The cancer that is diagnosed or treated is particularly prostate cancer. (I) and (II) can be used in vaccines. The antibodies or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-OCT-2001
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Kalos MD, Fanger GR,
Wang A, Meagher MJ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-JAN-2001; 2001WO-US01574.
                                                                                                                                                                                                                                                                                               Claim 1; Page 306; 543pp; English.
                                                                                                                                                                                                                                                                                                                                                               New polynucleotide encoding diagnosing, monitoring and to for use in vaccines -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CORI-) CORIXA CORP
   prostate cancer.
(I) can be used
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llarity 100.0%;
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      for monitoring
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GR, Day
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                                                                                                                                                                                                                                                                                                                                                                           oding a prostate-specific protein, and treating prostate cancer in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
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      the progression
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Retter MW,
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41;
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, Stolk JA,
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Query Match

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Best Local S
Matches 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes an isolated polypeptide (PI) comprising at least an immunogenic portion of a prostate-specific protein, or its variant. Also described are polynucleotides (NI) encoding (PI). (PI) and (NI) have cytostatic activity and can be used in vaccine production. The polypeptides, nucleic acids and antibodies from the present invention are useful in the diagnosis and therapy of prostate cancer. Prostate specific genes P704P, P712P, P775P and B305D are located in a ganomic region on chromosome 22q11.2 known as the Cat Eye Syndrome region. Prostate specific antigen (PSA) P501S was located on chromosome 1. AAH84671 to AAH85143 and AAG99000 to AAG99077 represent
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chromosome 22q11.2; prostate-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; prostate cancer; therapy; diagnosis; cat eye syndrome;
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                                                                                                                                                                                                     Isolated polypeptide comprising at prostate-specific protein, useful i prostate cancer -
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18-NOV-1999;
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                                                                                                                                                                                                                                                                                                                                                                          09-NOV-2000;
                         polynucleotide and polypeptide sequences used in the of the present invention.
                                                                                                                                                                               Claim 5; Page 206; 325pp; English.
                                                                                                                                                                                                                                                    WPI; 2001-308785/32
                                                                                                                                                                                                                                                                             Kalos MD,
                                                                                                                                                                                                                                                                                                               (CORI-) CORIXA CORP.
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MD, Retter MW, Stol
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99US-0443686
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                                                                                                                                                                                                                     an immunogenic diagnosis and
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Skeiky YAW,
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                                      exemplification
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RESULT :
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AAH02652/c
AAH02652 standard; cDNA; 301
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Best Local Similarity 100
Matches 22; Conservative
                                                                                                                    4709 ccatcaaaaaaaaaaaaaaaa 4730
                                                                                                                                                                                                                                              The present invention describes an isolated polypeptide (I) comprising at least an immunogenic portion of a prostate tumour antigen protein or its variant. (I) have cytostatic activity and can be used in vaccine production. (I), prostate tumour antigen polynucleotides, an antigen presenting cell (APC e.g. a dendritic cell) that expresses (I), and a pharmaceutical composition containing (I) are useful for inhibiting the development of cancer in a patient. Antibodies specific for prostate specific proteins and oligonucleotides that hybridise to a polynucleotide that encodes a prostate specific protein are useful for detecting the presence or absence of a cancer or monitoring the progression the progression of a cancer, especially prostate cancer. AntiO2422 to AAH2872, AAH74798 to AAB74821 and AAB74830 are sequences used in the exemplification of the present invention.
              AAH72016;
                                      AAH72016 standard;
                                                                                                                                                                                                                                Sequence 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CORI-) CORIXA CORP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prostate cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human;
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                                                                                                       CCATCAAAAAAAAAAAAAAAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                              4; Page 194; 276pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prostate tumour antigen;
te cancer; immunogenic; c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Skeiky YAW,
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                                      CDNA;
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f prostate cancer -
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                                                                                                                                                          Mismatches
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                                                                                                                                                                        . 22;
NO.
                                                                                                                                                                                                                             86
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Best Local :
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08-DEC-2000; 2000WO-US33312.
                             14-JUN-2001
                                                                                                                                  Human cervical cancer marker nucleic acid 422
                                                                                                                                                                                                                                                                                                    4709 ccatcaaaaaaaaaaaaa 4730
                                                       WO200142467-A2
                                                                                Homo sapiens
                                                                                                           Cervical cancer;
                                                                                                                                                                 19-SEP-2001
                                                                                                                                                                                                                    AAH69148 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to novel genes (AAH68727-AAH73383) associated with cervical cancer with cytostatic activity. The nucleic acids and encoded polypeptides are useful: to assess if a patient is afflicted with cervical cancer or has a pre-malignant condition; to monitor the progression of cervical cancer or a premalignant condition in a patient; and to select and/or assess the efficacy of a compound or therapy for inhibiting cervical cancer in a patient. The nucleic acids may also be
                                                                                                                                                                                            AAH69148;
                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 331 BP; 120 A; 50 C;
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                                                                                                                                                                                                                                                                                          303
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09-JUN-2000;
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14-MAR-2000;
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                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isolated nucleic acid for diagnosing and treating cervical cancer for assessing and detecting compounds for treating the cancer \boldsymbol{\cdot}
                                                                                                                                                                                                                                                                                       ccatcaaaaaaaaaaaaaaa 324
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2000US-0203791.
2000US-0210600.
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99US-0171350.
                                                                                                       cytostatic; pre-malignant condition;
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                                                                                                                                                                                                                   cDNA; 367
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Best Local S
Matches 22
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21-DEC-1999;
14-MAR-2000;
12-MAY-2000;
09-JUN-2000;
21-JUL-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-375006/39.
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                                                                                         Agostino |
Racie LA,
                                                                                                                                                                                                                                                                                                                                                                                                                              Expressed sequence tag; secreted protein; haematopoiesis regulator; tissue growth; activin; inhibin; tumour invasion suppressor; EST; hichemotaxis; chemokinesis; haemostasis; gene therapy; thrombolysis; receptor; ligand; anti-inflammatory; tumour inhibitor; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAV88305 standard;
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                                             WPI; 1999-070078/06
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                                                                                                                                                            (GEMY
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nes 22; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 isolated nucleic acid for diagnosing for assessing and detecting compounds
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990S-0171350.
2000US-0189315.
2000US-0203791.
2000US-0210600.
2000US-0220114.
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                                                                                         Spaulding
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                                                                                         Lavallie ER,
Treacy M;
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Pred. No.
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       are all secreted EST sequences isolated from a variety of human tissue asources. The EST sequences and proteins encoded by them are predicted to have useful biological activities which would make them sultable for treating, preventing or ameliorating medical conditions in humans and animals, although no supporting data is given. Suggested activities include nutritional activity, immune stimulating or suppressing activity, haematopoiesis regulating activity, tissue growth activity, haemostatic activiny, inhibin activity, chemotactic/chemokinetic activity, anemostatic and thrombolytic activity, receptor/ligand activity, anti-inflammatory activity, The EST sequences are also stated to be useful for gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e.g. human blood, kidney, foetal lung, placenta, testes, ovary, pituitary, retina and colon cDNA libraries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ovary, pituitary,
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01-MAY-2000;
15-AUG-2000;
07-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                              WO200118046-A2
                                                                                                                                                                                                                                                                                                                                                                                               Human, ovarian
                                                                                                                                                                                                                                                                                                                                                                                                                         Human ovarian
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The present invention provides a number of coding sequences and proteins, the over-expression of which is associated with ovarian carcinoma/cancer. These can be used in the diagnosis, treatment and prevention of ovarian cancer, optionally by gene therapy or in the form of a vaccine. The
                                                                                                                                                                                                                                                                                         08-SEP-2000;
                                                                                                                                                                                                                                                                                                                  15-MAR-2001.
                                                                   Claim 18;
                                                                                                       Isolated polypeptides associated with ovarian carcinomas, nucleic acids that encode them, useful for the prevention
                                                                                                                                                                       Хu J,
                                                                                                                                                                                                (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148 taaaagctgagtacatcagcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38
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                                                                                                                                                2001-211395/21.
                                                                                                                                                                         Stolk JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard; DNA; 489
                                                                   Page 186-187; 189pp; English
                                                                                             of ovarian cancers
                                                                                                                                                                                                                          ; 99US-0394374.
; 2000US-0561778.
; 2000US-0640173.
; 2000US-0656668.
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                                                                                                                                                                                                                                                                                            2000WO-US24827
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metabolic;

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RESULT 39
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26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
                                                                                                                                                                                                                                            The present invention relates to single exon nucleic acid probes (SENP). The present sequence is one such probe. The probes are useful for producing an alcroarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders.
                                                                                                                                                                                                                          Sequence 577
                                                                                                                                                                                                                                                                                                                                                             Claim 25;
                                                                                                                                                                                                                                                                                                                                                                                             analyzing
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                                                                       179
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22; Conser
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2000US-0207456
2000US-0608408
2000US-0632366
2000US-0632366
2000US-0234687
2000US-0236359
2000US-0236359
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ilarity 100.0%;
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                                                                                                                                  Mismatches
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                                                   06-MAY 1999
07-MAY 1999
11-MAY 1999
14-MAY 1999
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14-MAY 1999
18-MAY 1999
19-MAY 1999
21-MAY 1999
21-JUN-1999
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23-APR-1999
28-APR-1999
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04-MAY-1999
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05-MAR-1999

09-MAR-1999

23-MAR-1999

23-MAR-1999

25-MAR-1999

01-APR-1999

06-APR-1999
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16-APR-1999;
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99US-0132407
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99US-0132486
99US-0134286
99US-0134218
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99US-0135124
99US-0135124
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99US-013523
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99US-013624
99US-013945
99US-0139453
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99US-0130077.
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99US-0130510.
99US-0130891.
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99US-0123180
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Best Local Similarity 100.0%; Matches 22; Conservative 0;
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23-AUG-1999;
25-AUG-1999;
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                                                         AAA64589;
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                                                                                                standard;
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99US-0150684-
99US-0151065-
99US-0151065-
99US-0151066-
99US-0151080-
99US-0151080-
99US-01513758-
99US-0153778-
99US-0155486-
99US-0155486-
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99US-0157117-
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99US-0156596-
99US-0156596-
99US-0159231-
99US-0159331-
99US-0150761-
99US-0150761-
99US-0150361-
99US-0150381-
                      (first entry)
                                                                                                  DNA;
                                                                                                    589
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99US-0139460.
99US-0139462.
99US-0139463.
99US-0139763.
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99US-0140353.
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99US-014091.
99US-0141842.
99US-0142353.
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99US-0144263.
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99US-0145214.
99US-0146386.
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99US-0148368.
99US-0149136.
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99US-014916.
99US-0149175.
99US-0149175.
99US-0149172.
99US-0149172.
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RESULT 42
AAV34397/c
ID AAV343
XX AAV343
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                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                  Matches
                                          Upstream region; regulatory region; sunflower; albumin; lipid metabolism; delta-6 desaturase; transgenic plant;
                                                                              Sunflower
                  Synthetic.
                           Helianthus annuus
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                                                                                                                    AAV34397;
                                                                                                                                      AAV34397 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 97; 115pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel isolated nucleic acid encoding an OLD-35 or in the treatment and detection of e.g. cancer and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fisher PB, Leszcyniecka
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Pred. No.
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                                                                                                                                                                                                                             Mismatches
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                                                                                                                                                                                                                                                                             other;
                                                                                                                                                                                                                                              Length 589
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                                                   expression;
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Query Match
WPI; 2000-523870/47
P-PSDB; AAB22117.
                                                McGonigle B,
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                                                                                                                    05-SEP-1997;
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                                                                                                                                                                                                                    US6096504-A
                                                                                                                                                                                                                                                      Zea mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence corresponds to an amplified fragment of the upstream region of the sunflower albumin gene 5' regulatory region. The sequence spans from -860 to +29 of the albumin gene (Ha5) and is used to direct high level seed-specific expression of a heterologous gene, such as lipid metabolism genes, e.g. delta-6 desaturase (AAV34398), in transgenic plants. The 3' BamHI restriction enzyme recognition and cleavage site (GGATCC) was added during the PCR amplification procedure.
                                                                                (DUPO ) DU PONT DE NEMOURS &
                                                                                                                                                  10-FEB-1999;
                                                                                                                                                                                                                                                                                   Malze; glutathione-S-transferase; GST; plant detoxification; herbicide metabolism; ss.
                                                                                                                                                                                                                                                                                                                                     Maize glutathione-S-transferase
                                                                                                                                                                                                                                                                                                                                                                         25-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                           AAA76268;
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA76268 standard;
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22; Conser
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                                                O'Keefe
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                                                                                                                97US-0924759.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261 A; 177 C; 127 G; 278 T; 0 other;
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809
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                                                                                                                                                                                                                                                                                                                                                                                                                                         cDNA; 1098
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                regulatory region - useful for directing in plant seeds
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Pred. No.
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37;
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RRESULT 44
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ID AAI596
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Best Local S
Matches 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
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                                                                                                                                                                                                                                                                                                             21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human polynucleotide
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                                                                                                                                                                                                                                                                                            03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                       26-DEC-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
WPI; 2001-442253/47
P-PSDB; AAM40446.
                                                                                                                                                                    (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   leukaemia; ss
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                                                                    Y, Y
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                                                                       Liu C,
Wang Z,
Zhou P,
                                                                                                                                                                                                               ; 2000US-0488725.
; 2000US-0552317.
; 2000US-0598042.
; 2000US-0620312.
; 2000US-0623450.
; 2000US-0662191.
; 2000US-0693036.
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                                                                                                  Asundi V,
Wehrman T,
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                                                                         Goodrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO
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Pred. No.
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Xu C, Xue
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                                                                            Drmanac
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36;
                                                                              RT; 2, 4,
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                                                                                                                            Ren F,
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Matches 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4709 ccatcaaaaaaaaaaaaaaaa 4730
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                                                                                                                                                                             New nucleic acid sequences expressed derived polypeptides, for treatment cidentification of therapeutic agents
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                                                                                                                                                                                                                                                                                                                                                          Rosenthal
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This invention describes novel cDNA sequences (A) that are highly expressed in normal human pancreatic tissue and which have anticancer and cytostatic activity. (A) are used (1) for recombinant expression of the combinant expression of the cytostatic activity.

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Claim

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    Copyright (c) 1993 - 2000 Compugen Ltd

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  BB
US-09-078-294-3
US-08-563-912-17
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US-09-132-553-17
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US-09-248-335-35
US-08-291-426-1
US-08-124-34-0-1
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US-08-125-5976-1
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US-08-79-2478-1
US-09-004-731-1
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LOCATION: 271..1314
OTHER INFORMATION: ,
US-08-826-611-1
      Query Match
Best Local S
Matches 23
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                                                                                                                      FEATURE:
                                                                                                                                     MOLECULE TYPE: cDNA
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ALIGNMENTS

## Sequence 1, Application US/08826611 Patent No. 6031154 TELEPHONE: (415) 576-0300 TELEFAX: (415) 576-0300 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 1907 base pairs TYPE: nucleic acid TYPE: nucleic acid TYPE: STRANDENESS: Single COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Ve: CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/826,611 FILING DATE: 05-APR-1997 CLASSIFICATION: 800 CLASSIFICATION: 800 CLASSIFICAL ATTORNEY/AGENT INFORMAL NAME: Bastian, Kevin L. REGISTRATION NUMBER: 34,774 REFERENCE/DOCKET NUMBER: 02307 TELECOMMUNICATION INFORMATION: TELEPONE: (415) 576-0300 TELEPONE: (415) 576-0300 APPLICANT: Kanayama, Yoshinori TITLE OF INVENTION: Fructokinase Genes and Their Use in TITLE OF INVENTION: Metabolic Engineering of Fruit Sweetness E: Townsend and Townsend and Crew LLP Two Embarcadero Center, Eighth Floor /product- "tomato Frk1" В 023070-077400US Version #1.30

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Score 23; DB; Pred. No. 3; 0; Mismatches

DB 3;

Length 1907; Indels

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                            TELECOMMUNICATION INFORMATION:
TELEPHONE: (404)873-8794
TELEPAX: (404)873-8795
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 29 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; LENGTH: 80595
; TYPE: DNA
; ORGANISM: Nucleotide sequence of HC-contig
US-09-078-294-3
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US-09-078-294-3
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Patent No. 5854033
GENERAL INFORMATION:
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Best Local Similarity
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Patent No. 6265211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Choo, Kong-Hong Andy
APPLICANT: Du Sart, Desiree
APPLICANT: Du Sart, Desiree
APPLICANT: Cancille, Michael R.
TITLE OF INVENTION: A NOVEL NUCLEIC ACID MOLECULE
FILE REFERENCE: Davies Col
CURRENT APPLICATION NUMBER: US/09/078,294
CURRENT FILING DATE: 1998-05-13
NUMBER OF SEQ ID NOS: 29
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                                                                                                                                                                      CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
REGISTRATION NUMBER: 31,
                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 2800 One Atlantic Center STREET: 1201 West Peachtree Street CITY: Atlanta
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REFERENCE/DOCKET NUMBER: YU115
  STRANDEDNESS:
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                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/563,912
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WENTION: Rolling Circle Replication Reporter Systems
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                                                                                               TELEFAX: (404)873-8795
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 06
FILING DATE: NO. 61434
CLASSIFICATION: 435
          MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                               TELEPHONE: (404)873-8794
                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patreb L.
REGISTRATION NUMBER: 31,;
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                           TYPE: nucleic
STRANDEDNESS:
                                                                                                                                                                                                                                APPLICATION NUMBER: 60/016,677 FILING DATE: May 1, 1996 CLASSIFICATION: 435
                                                    TOPOLOGY:
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                                                                                           ENGTH:
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STATE: Georgi
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STREET: 2800 One Atlantic Center
STREET: 1201 West Peachtree Street
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nucleic acid
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                                                                                                                                  (404)873-8795
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N: 435
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Pred. No.
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Query Match Best Local Similarity Matches 22; Conserv

Conservative

0.5%; Score 22; 100.0%; Pred. No. tive 0; Mismatc

DB 3;

Length 29;

Mismatches

0;

Indels

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US-09-132-552-17/c
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; Sequence 17, Application US/09132553

; Patent No. 6210884
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Patent No. 6183960
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: YU
TELECOMMUNICATION INFORMATION:
TELEPHONE: (404)873-8795
INFORMATION FOR SEQ ID NO: 17:
INFORMATION FOR SEQ ID NO: 17:
                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Lizardi, TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
REGISTRATION NUMBER: 31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                           APPLICANT: Lizardi,
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
                                               CORRESPONDENCE ADDRESS:
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STREET: 2800 One Atlantic Center
STREET: 1201 West Peachtree Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/132,552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
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E: Patrea L. Pabst
2800 One Atlantic Center
1201 West Peachtree Street
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100.0%; Pre
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                                                                              Paul M.
Rolling Circle Replication Reporter Systems
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31,284
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; Pred. No.
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; ANTI-SENSE: US-09-132-553-17
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; Patent No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                APPLICANT: Nunberg, APPLICANT: Beremand, TITLE OF INVENTION: ITITLE OF INVENTION: TITLE OF INVENTION: OUNBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Pabet, Patrea L.
REGISTRATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: YU
TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
ATTORNEY/AGENT INFORMATION:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
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HYPOTHETICAL: NO
                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                   APPLICANT:
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ZIP: 30306-3450
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STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  22 TCCATCAAAAAAAAAAAAAAA 1
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TOPOLOGY: lin
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                                                                                                  ZIP: 11530
                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENGTH:
                                                                                                                                                                                                                                                                                                                                                2, Application US/08831570 5959175
                                                                                                                                SSEE: Scully, Scott, Murphy & Presser
T: 400 Garden City Plaza
Garden City
: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
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(404)873-8795
                                                                                                                                                                                                                                                                              Nunberg, Andrew N.
Beremand, Phillip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO
                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                   Thomas, Terry L.
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00.0%; Pred. No.
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ATTORNEY/AGENT INFORMATION:

CLASSIFICATION:

APPLICATION NUMBER: FILING DATE: 09-AP

09-APR-1997

US/08/831,570

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RESULT 9
US-08-991-426-1
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; ORGANISM: maize
US-09-248-335-35
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APPLICANT: MCGONIGLE, BRIAN
APPLICANT: MCGONIGLE, DANIEL
TITLE OF INVENTION: PLANT GLUTATHIONE-S-TRANSFERASE ENZYMES
FILE REFERENCE: CL-1128-A
CURRENT APPLICATION NUMBER: US/09/248,335
CURRENT FILING DATE: 1999-02-10
EARLIER APPLICATION NUMBER: 08/924,759
EARLIER APPLICATION NUMBER: 08/924,759
EARLIER FILING DATE: 1997-September-05
NUMBER OF SEQ ID NOS: 74
SOFTWARE: MICROSOft Word Version 7.0A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-831-570-2
                                                                                                                                                                                          Sequence 1, Application US/08991426
Patent No. 6013257
GENERAL INFORMATION:
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Patent No.
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 742-4343
TELEPHONE: (516) 743-4366
INFORMATION FOR SEO ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENCTH: 643 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: 11near
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 35
                                                                                                                                                                                                                                                                                                                                                                             Matches
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Best Local Similarity
                                                                                            APPLICANT: Pan, Yang
TITLE OF INVENTION: NEUROTACTIN ANI
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C
STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                       1005 ссатсававававававава 1026
                                                                                                                                                                                                                                                                                                                        4709 ccatcaaaaaaaaaaaaaaaa 4730
COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
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STREET: 42
TITY: BOSTON
4A
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                                COUNTRY: US
ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: DiGiglio, Frank S.
REGISTRATION NUMBER: 31,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35, Application US/09248335
5. 6096504
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100.0%; Pred. No. 7;
vative 0; Mismatches
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100.0%; Pred. No.
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; LOCATION: (40)...(1224)
US-09-143-470-1
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; LOCATION:
US-08-991-426-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/143,470
CURRENT FILING DATE: 1998-08-28
NUMBER OF SEQ ID NOS: 20
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 1784
                                                                                                                            Query Match 0.5%; Score 22; DB Best Local Similarity 100.0%; Pred. No. 7. Matches 22; Conservative 0; Mismatches
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Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Pan, Yang
TITLE OF INVENTION: NEUROTACTIN AND USES THEREFOR
FILE REFERENCE: 09404/049001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/991,426
FILING DATE: 16-DEC-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/851,160
FILING DATE: 05-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION:
APPLICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Mus musculus
                                   4709 ccatcaaaaaaaaaaaaaaaaa 4730
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LENGTH: 1784 base pairs
TYPE: nucleic acid
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REFERENCE/DOCKET NUMBER: 09-
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
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OPERATING SYSTEM: Windows95
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 61,
TELEFAX: 200154
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Local Similarity 100.0%;
hes 22; Conservation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Meiklejohn, Ph.D., Anita L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Coding Sequence 40...1224
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Pred. No.
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7.4;
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                                                                                                                                                                                                    Length 1784;
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US-08-126-587C-8
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US-08-619-542B-28
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Sequence 8, Appra-
Sequence 8, Appra-
No. 5534438
Sequence 28, Application US/08619542B
Sequence 28, Application US/08619542B
Patent No. 5830662
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Of New York
APPLICANT: Of New York
TITLE OF INVENTION: METHOD FOR CONSTRUCTION OF NORMALIZED
TITLE OF INVENTION: CDNA LIBRARIES
NUMBER OF SEQUENCES: 78
CORRESPONDENCE ADDRESS:
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Best Local
                                                                                                                                                                                                                                                                                                                Matches
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ANTI-SENSE: NO
POSITION IN GENOME:
CHROMOSOME/SEGMENT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 704-334-2014: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Lin, Biaoyang
TITLE OF INVENTION: Process for Isolating Genes and the Gene
TITLE OF INVENTION: Causative of Huntington's Disease and Differential 3'
TITLE OF INVENTION: Polyadenylation in the Gene
NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Layton Jr., Samuel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/126,587C FILING DATE: 24-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                        3988 CCATCAAAAAAAAAAAAAAAA 4009
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OPERATING SYSTEM: PC-DOS/MS-DOS
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CITY: Charlotte
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 4032 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
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1211 E. Morehead Street
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Andrew, Susan
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                                                                                                                                                                                                                                                                                                                  Indels
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US-08-289-247B-1
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 278-0400
TELEFAX: (212) 391-0525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
COMPUTER: IBM PS/2 Model 50Z or 55SX
OPERATING SYSTEM: MS-DOS (Version 5.1)
                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Clark & Elbing LLP
STREET: 176 Federal Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: other nucleic acid
                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Morrison, Bric
APPLICANT: Leder, Philip
ATTORNEY/AGENT INFORMATION:
NAME: Bieker-Brady, Kristina
REGISTRATION NUMBER: 39,109
                                                 APPLICATION NUMBER: US/08/28/
FILING DATE: August 11, 1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                        SOFTWARE: WordPerfect (Version 5.1)
CURRENT APPLICATION DATA:
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CLASSIFICATION: 435
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STREET: 11
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TOPOLOGY: linear
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CITY: Boston
STATE: Massachusetts
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1185 Avenue of the Americas
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                                                                                                                         US/08/289, 247B
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21;
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PCT-US95-09762-1
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                                                                  Query Match
Best Local
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GENERAL INFORMATION:
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Best Local Similarity
Matches 21; Conserv
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SEQUENCE CHARACTERISTICS:
LENCTH: 522
4710 catcaabaaaaaaaaaaa 4730
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ZIP: 02110-200-
ZIP: 02110-200-
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: 3.5" DISKETTE NO 5.5X
MEDIUM TYPE: 3.5" OPERIUM TYPE: 1.44 Mb
MEDIUM TYPE: 3.5" DISKETE NO 5.1
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SEQUENCE CHARACTERISTICS:
LENGTH: 522
                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/289,247
FILING DATE: August 11, 1994
ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul T.
                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: MS-DOS (VELLACO)
OPERATING SYSTEM: MS-DOS (VELLACO)
SOFTWARE: WordDerfect (Version 5.1)
CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
PCT/US95/09762
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ADDRESSEE: Fish & Richardson
STREET: 225 Franklin Street
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 428-0200
                                                                                                                                                                                                                                                TELEFAX: (61/
                                             Local Similarity 100.
nes 21; Conservative
                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: singl
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                                                                                                                                                                                        TYPE:
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ZIP: 02110-2804
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STATE: Massa
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STRANDEDNESS: sing
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                                                                                                                                                                                                                                                                   (617) 542-8906
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100.0%; Pr/
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FR: 30,162
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Pred. No.
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                                               Mismatches
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                                                                           Length 522;
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RESULT 16
US-09-004-731-11/c
; Sequence 11, Appli
; Patent No. 6177251
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US-09-004-731-9
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                                                                                                                      GENERAL INFORMATION:
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TELEFAX: (303) 863-0223
INFORMATION FOR SEQ ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 775 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
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NAME/KEY:
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NAME: Connell, Gary J.
REGISTRATION NUMBER: 32,020
REFERENCE/DOCKET NUMBER: 26
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/004,731
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
LOCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
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STREET: 1700 Lincoln Street, Suite 3500
CITY: Denver
STATE: Colorado
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6177258
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Wu Hunter, Shirley
Stiegler, Gary
Gaines, Patrick J.
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Stiegler, Gary
Gaines, Patrick J.
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APPLICANT:

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NAME: CONNEIL, GATY J.
REGISTRATION NUMBER: 32,020
REFERENCE/DOCKET NUMBER: 2618
TELECOMMUNICATION INFORMATION:
TELEPHONE: (303) 863-9700
TELEPAN: (303) 863-9723
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 775 base pairs
                                                                                                                                                                                                                                                                                                                                                  Sequence 9, Application US/08749699 Patent No. 6210920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy
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CORRESPONDENCE ADDRESS:
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APPLICATION NUMBER:
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CITY: Denver
Colora
                                                                                                                                                                                                                                APPLICANT: Gaines, Patrick J.
TITLE OF INVENTION: FUEA PROTEASE PROTEINS, NUCLEIC ACID
TITLE OF INVENTION: MOLECULES AND USES THEREOF
NUMBER OF SEQUENCES: 103
              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Sheridan Ross P.C.
                                                                                                                                                                                                                                                                                                    APPLICANT: Wu Hunter, Shirley APPLICANT: Stiegler, Gary
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/09/004,731
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: sing
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APPLICATION NUMBER:
                                                                                                                  COUNTRY: U
ZIP: 80203
                                                                                                                                                    STATE:
                                                                                                                                                Denver
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100.0%; Pred. No.
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US/08/749,699
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US-08-749-699-9
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                    APPLICATION NUMBER: US/08/749,
FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT IMFORMATION:
NAME: Connell, Gary J.
REGISTRATION NUMBER: 32,020
REFERENCE/DOCKET NUMBER: 2618
TELECOMMUNICATION INFORMATION:
TELEPHONE: (303) 863-9700
TELEPHONE: (303) 863-9700
TELEPAX: (303) 863-0223
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 775 base pairs
TELEPHONE: 175 base pairs
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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NAME: Connell, Gary J.
REGISTRATION NUMBER: 32,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Wu Hunter, Shirley
APPLICANT: Stiegler, Gary
APPLICANT: Gaines, Patrick J.
TITLE OF INVENTION: FLEA PROT
TITLE OF INVENTION: MOLECULES
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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LOCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 100.0%; I
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STRANDEDNESS:
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TOPOLOGY: linear

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RESULT 20
US-08-725-532A-2/c
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; Sequence 2, Application US/08725532A
                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Brown, Scott A.
REGISTRATION UNMBER: 32,724
TELECOMBUNICATION INFORMATION:
TELEPHONE: (617) 498-824
TELEPHONE: (617) 876-5851
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 1055 base pairs
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                                                                                                                                        Matches
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GENERAL I
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Best Local Similarity
                                                                        08-702-344-18
                                                                                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/702,344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Spaulding, VIKK1
TITLE OF INVENTION: SECRETED PROTEINS AND POLYNUCLEOTIDES
TITLE OF INVENTION: ENCODING THEM
NUMBER OF SEQUENCES: 37
CORRESPONDENCE ADDRESS:
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                                                                                                                                                     Local Similarity 100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Genetics Institute, Inc. 87 CambridgePark Drive
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                                                                                                                                      Conservative
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Treacy, Maurice
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LaVallie, Edward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.4%; Score 21;
ilarity 100.0%; pred. No.
Conservative 0; Mismatc
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                                                                                                                                     Mismatches
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20;
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RESULT 21
US-08-707-399E-1
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                                                                                                                                                                                                                                                                                      Sequence 1, Application US/08707399E
Patent NO. 6008014
GENERAL INFORMATION:
APPLICANT: Acton, Susan and Gimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 21; Conserv
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TELEPHONE: 415-855-0555
TELEFAX: 415-845-4166
INFORMATION FOR SEQ ID NO: 2:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                        APPLICANT: Acton, Susan and Gimeno, Carlos
TITLE OF INVENTION: Lipid Metabolic Pathway Compositions
TITLE OF INVENTION: and Therapeutic and Diagnostic Uses Therefor NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
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NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 1275 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Diskette
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STREET: GA Alto
TMATE: CA
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TITLE OF INVENTION: NOVEL HUMAN TYROSINE PHOSPHATASES
NUMBER OF SEQUENCES:-
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                                                                                                                                                         STREET: 28 S'CITY: Boston
                                                                                                       COUNTRY: USA
ZIP: 02109
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CLONE: Consensus
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                                                                                                                                        Massachusetts
                                                                                                                                                                           28 State Street
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Conservative 0;
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CURRENT APPLICATION DATA:

US/08/707,399E

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; LOCATION: US-08-707-399E-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
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NAME: Amy E. Mandragouras
REGISTRATION NUMBER: 36,2:
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US, FILING DATE: September PRIOR APPLICATION DATA:
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                                      FILING DELICATION: 435
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 104947/1992
APPLICATION NUMBER: 23-APR-1992
TOWNSTION:
                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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              FILING DATE: 23-APR-1992
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5510259
REGISTRATION NUMBER: 24,
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                                                                                                                                 APPLICATION NUMBER: US
FILING DATE: 19930422
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                                                                                                                                                                                                                                                                  ZIP: 22202
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REFERENCE/DOCKET NUMBER:
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SUZUKI, MANABU
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Pred. No.
10-615-0x
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Best Local Similarity 1vv.
21; Conservative
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                                                                                                                                                                      APPLICATION NUMBER: US/08/595,974
FILING DATE: 06-FEB-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/052,205
FILING DATE: 22-APR-1993
APPLICATION NUMBER: UP 104947/1992
FILING DATE: 23-APR-1992
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           TELEX: 248855 OPAT UK
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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ORGANISM: Homo
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                                                                                         REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5705608man F.
REGISTRATION NUMBER: 24,618
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CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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OPERATING SYSTEM:
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ZIP: 22202
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                                                               TELEFAX:
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ENGTH:
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                                                NE: (703) 413-3000
: (703) 413-2220
248855 OPAT UR
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1755 S. Jefferson Davis Highway, Suite 400
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1393 base pairs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAKAMURA, MASATAKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASAO, HIRONOBU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUGAMURA, KAZUO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA
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100.08; Pi
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                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.25
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Pred. No.
                                                                                                                10-615-0x
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STRANDEDNESS: unknown

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Best Local Similarity 100.
Matches 21; Conservative
                                                                                                                                                                                                       TELEPHONE: (703) 413-3000
TELEFAX: (703) 413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/052,20: FILING DATE: 1930422 CLASSIFICATION: 435 PRIOR APPLICATION DATA: APPLICATION NUMBER: JP 104947/19: FILING DATE: 23-APR-1992 ATTORNEY/ACENT INFORMATION: NAME: Oblon, No. 5510259man F. REGISTRATION NUMBER: 24,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tent No.
                                                                                                       MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 10 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: SUZUKI, MANABU APPLICANT: HAMURO, JUNJI TITLE OF INVENTION: HUMAN
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MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                   TYPE: NUCLEIC ACID
STRANDEDNESS: unknown
TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
NAME/KEY: mat_peptide
                                                       NAME/KEY:
                                                                                       ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 1755 S. CITY: Arlington STATE: Virginia
                                     LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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1755 S. Jefferson Davis Highway, Suite 400
                                   CDS
15..1121
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SHIMAMURA, TOSHIRO
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                                                                                   Homo sapiens
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100.0%; Pred. No. 19
ative 0; Mismatches
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US-08-595-974-3
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Best Local :
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TELEFAX: (703) 413-2220
TELEX: 24865 OPAT UR
INFORMATION FOR SEQ ID NO: 3:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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               FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/052,205
FILING DATE: 22-APR-1993
APPLICATION NUMBER: JP 104947/1992
FILING DATE: 23-APR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4710 catcaaaaaaaaaaaaaa 4730
                                                              MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                              SEQUENCE CHARACTERISTICS:
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                                              ORGANISM:
                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/595,974 FILING DATE: 06-FEB-1996 CLASSIFICATION: 435
                                                                                                           STRANDEDNESS: unknown
                                                                                                                                                                                                                                                               NAME: Oblon, No. 5705608
REGISTRATION NUMBER: 24,
REFERENCE/DOCKET NUMBER:
LOCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, ADDRESSEE: P.C.
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                                                                                                                             nucleic acid
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15..1121
                                             Homo sapiens
                                                                                             unknown
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15..80
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100.0%; Pred. No. 19
1ve 0; Mismatches
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NAME/KEY:

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RESULT 27
US-09-108-020-11
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Best Local Similarity 100.0%;
                                                                                                         Matches
                                                                                                                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                         FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Majarian, William R
REGISTRATION NUMBER: P-41,173
REFERENCE/DOCKET NUMBER: BB-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 302-992-4926
TELEFAX: 302-773-0164
                                                                                                                                                                                                                                                                                                              TELEFAX: 302-773-0164
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/872,302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Fatty Acid Modifying Enzymes From TITLE OF INVENTION: Developing Seeds of Vernonia galamenensis NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                4710 catcaaaaaaaaaaaaaaaa 4730
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                                                    1455 CATCAAAAAAAAAAAAAAAA 1475
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                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                       NAME/KEY:
LOCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Wilmington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                   ENGTH:
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                                                                                                                       Similarity
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1007 Market Street
                                                                                                                                                                                                                                                                                    1476 base pairs
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81..1121
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Pred. No.
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Pred. No.
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                                                                                                            Mismatches
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19;
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; LENGTH: 1587
; TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-09-108-020-11
                                                                                                                                                         ; LENGTH: 1736
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-360-197-13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Randall, Douglas D.
APPLICANT: Malernyk, Jan A.
APPLICANT: Luethy, Michael H.
APPLICANT: Luethy, Michael H.
APPLICANT: Mooney, Brian P.
TITLE OF INVENTION: USE OF DNA ENCODING PLASTID PYRUVATE DEHYDROGENASE AND TITLE OF INVENTION: BRANCHED CHAIN OXOACID DEHYDROGENASE COMPONENTS TO TITLE OF INVENTION: ENHANCE POLYHYDROXYALKANOATE BIOSYNTHESIS IN PLANTS FILE REFERENCE: UMO 1482
CURRENT APPLICATION NUMBER: US/09/108,020A
CURRENT FILING DATE: 1998-06-30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
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Best Local Similarity
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                                                                                                                                                                                                                                SEQ ID NO 13
                                                                                       Query Match
Best Local Similarity
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EARLIER APPLICATION NUMBER: 60/0
EARLIER FILING DATE: 1998-03-02
NUMBER OF SEQ ID NOS: 54
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EARLIER FILING DATE: 1997-06-30
EARLIER APPLICATION NUMBER: 60/055,255
                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Human and Rat Families of Neuronal Acid-Sensitive TITLE OF INVENTION: Cationic Channels, Their Cloning and Applications FILE REFERENCE: 989.6706P
                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/360,197
CURRENT FILING DATE: 1997-07-23
PRIOR APPLICATION NUMBER: 09/129,758
PRIOR FILING DATE: 1998-08-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1998-08-05
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                                                                                                                                                                                                                                                SOFTWARE:
                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
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1554 catcaaaaaaaaaaaaaa 1574
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6143561
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                                                                                                                                                                                                                                                PatentIn Ver. 2.1
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Waldmann, Rainer
Deweille, Jan R.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09360197
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                                                                        Conservative
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100.0%; Pr
                                                                                        100.0%;
                                                                                                           0.48;
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b; Pred. No. 19;
0; Mismatches
                                                                      Score 21; DB 4; pred. No. 18; 0; Mismatches
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19;
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                                                                                                             Length 1736;
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US-07-695-564-4
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Patent No.
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TELEPHONE: 619-546-1555
INFORMATION FOR SEO ID NO: 4:
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APPLICANT: Quaranta, V
TITLE OF INVENTION: IN
TITLE OF INVENTION: DO
                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                           FEATURE: misc_feature LOCATION: 1..5499
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                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE NAME NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 5499 base pairs
TYPE: NUCLEIC ACID
STRANDEDNESS: double
                                                                                                                OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                     LOCATION: 1..3260
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                              FEATURE:
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STREET: San Diego
CITY: San Diego
CTATE: California
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                                                             NAME/KEY:
            OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                    NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: /product= "Human ALPHA 6B"
                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: 1..3260
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OPERATING SYSTEM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
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                                                             misc_feature
2924..3325
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3261..5499
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                                                                                                          /note= "Nucleotides 3261-5499 of SEQ ID NO:4 are identical to nucleotides 3391-5629 of SEQ ID NO:2. SEQ ID NO:4 has a 130 nucleotide deletion in relation to SEQ ID NO:2."
          /note= "Encompasses the sequence of
the ALPHA 6B cDNA amplified using primers
1156/1157."
                                                                                                                                                                                                                                   /note= "The sequence of SEQ ID NO:4
is identical to SEQ ID NO:2 between nucleotides 1
and 3260."
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RESULT 30
US-08-241-387-4
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/:
FILING DATE: 10-MAY-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: USSN 0:
FILING DATE: 03-MAY-1004
ATTORNET/AGENT INFORMATION:
NAME: FILLING, Thomas
REGISTRATION NUMBER: 34,16:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
        NAME/KEY: misc_feature
LOCATION: 3261.5499
OTHER INFORMATION: 5EQ I
OTHER INFORMATION: SEQ I
OTHER INFORMATION: of SE
                                                                                       FEATURE:
                                                                                                NAME/KEY: misc_feature LOCATION: 1.3260
OTHER INFORMATION: /note OTHER INFORMATION: is id
                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                 FEATURE: NAME/KEY: misc_feature LOCATION: 1..5499
                                                                                                                                                                                                                                                               ORIGINAL SOURCE:
ORGANISM: Hom
                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: TS
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-554-937
TELEFAX: 619-554-6312
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                HYPOTHETICAL: I
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CORRESPONDENCE ADDRESS:
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APPLICANT: Tamura, Richard N.
APPLICANT: Quaranta, Vito
TITLE OF INVENTION: INTEGRIN ALPHA SUBUNIT CYTOPLASMIC
TITLE OF INVENTION: DOMAIN POLYPEPTIDES, ANTIBODIES AND METHODS
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                                                                                                                                                                                                   OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 5499 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                 TYPE:
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      INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                               double
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/note- "Nucleotides 3261-5499 of SEQ ID NO:4 are identical to nucleotides 3391-5629 of SEQ ID NO:2. SEQ ID NO:4 has a 130 nucleotide
                                                                                                   and 3260.
                                                                                                 /note= "The sequence of SEQ ID NO:4
is identical to SEQ ID NO:2 between nucleotides
and 3260."
                                                                                                                                                                                              /product- "Human ALPHA 6B"
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17;
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US-08-241-387-4
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NFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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APPLICANT: Quaranta, Vico
TITLE OF INVENTION: INTEGRIN ALPHA SUBUNIT CYTOPLASMIC
TITLE OF INVENTION: DOMAIN POLYPEPTIDES, ANTIBODIES AND METHODS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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NAME: Fitting, Thomas
REGISTRATION NUMBER: 34,163
REFERENCE/DOCKET NUMBER: SCI
TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: (
FILING DATE: 19910503
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                 LOCATION: 1..5629
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
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                                                                                                                                                          EATURE:
                                                                                                                                                                                                           NTI-SENSE: NO
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CITY: San Diego
STATE: Californ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
NAME/KEY: misc_feature LOCATION: 147..149
OTHER INFORMATION: /fu
                                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                              STRANDEDNESS: double TOPOLOGY: linear
                                                                                                                                                                                                                                                                                       TYPE: NUCLEIC ACID
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                                                                                                                                      NAME/KEY: misc_feature
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11300 Sorrento Valley Road, Suite 200
                                                                                                                                                                                                                                                                                                               5629 base pairs
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2924..3325
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the ALPHA 6B cDNA amplified using primers
1156/1157."
                                                                 /product= "Human ALPHA 6A"
/note= "SEQ ID NO: 2 is the 5629 base nucleotide
sequence of the human ALPHA 6A cDNA."
 /function= "Transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/07/695,564
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; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                      SCR0377P
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US-08-241-387-2
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                               TELEFAX: 619-554-6312 INFORMATION FOR SEQ ID NO:
                                                                                                                                     FILING DATE: 10-MAY-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: USSN (
FILING DATE: 03-MAY-1004
ATFORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                        SOFTWARE: Patentin Rel CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
SEQUENCE CHARACTERISTICS:
LENGTH: 5629 base pairs
                                                                            TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
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OTHER INFORMATION:
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OTHER INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                            NAME: Fitting, Thomas REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                       OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                              TELEPHONE: 619-554-2937
TELEFAX: 619-554-6312
                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
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3: CA
fRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                    10666 No.
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2924..3455
                                                                                                                                                                                                                                                                                         IBM PC compatible SYSTEM: PC-DOS/MS-DOS
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566 No. 5589570th Torrey Pines Road, TPC-8
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NO:4."
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GFFKR."
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                                                                                                                                                                                                                                                                        Release #1.0,
                                                                                                                                                                              USSN
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                                                                                                            34,163
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Pred. No.
                                                                                                TSRI241.0D1
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17;
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: OTHER INFORMATION: Description of Artificial Sequence: Primer p41: OTHER INFORMATION: RH598
US-09-306-290-37
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                                                                                    APPLICANT: ROVERS, GIOVANNI
APPLICANT: MUKHOPADHYAY, SUN11
TITLE OF INVENTION: METHODS FOR SOLID-PHASE AMPLIFICATION OF DNA TEMPLATE
TITLE OF INVENTION: (SPADT) USING MULTIARRAYS
FILE REFERENCE: 09924-10
CURRENT FILIGATION NUMBER: US/09/306,290
CURRENT FILING DATE: 1999-05-06
NUMBER OF SEQ ID NOS: 43
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 37
LENGTH: 43
                                                                                                                                                                                                                                                                                                                 Sequence 37, Application US/09306290 Patent No. 6221635
                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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                                                      TYPE: DNA
ORGANISM: Artificial Sequence
                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                         4710 catcaaaaaaaaaaaaaa 4730
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: /note= "The 130 nucleotide sequence OTHER INFORMATION: present in SEQ ID NO: 2 but deleted OTHER INFORMATION: NO:4."
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LOCATION: 3264.3278
OTHER INFORMATION: /pro
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OTHER INFORMATION:
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LOCATION: 147:.149
OTHER INFORMATION: /function=
OTHER INFORMATION: initiator"
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'ATURE:
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LOCATION: 216..3365
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/note= "SEQ ID NO: 2 is the 5629 base nucleotide
sequence of the human ALPHA 6A cDNA."
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Pred. No.
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17
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; LCCATION: (1)...(260)
; OTHER IMPORMATION: n = A,T,C
US-08-688-988-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-558-735-10
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APPLICANT: Lefebvre, Daniel D.
APPLICANT: Helboobi, Mohammad A.
TITLE OF INVENTION: PHOSPHATE STARVATION-INDUCIBLE PROTEINS
FILE REFERENCE: PPL96-03
CURRENT APPLICATION NUMBER: US/08/688,988B
CURRENT FILING DATE: 1996-07-31
NUMBER OF SEO ID NOS: 48
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 19
LENGTH: 260
TYPE: NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
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Best Local Similarity
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Best Local Similarity
Matches 20; Conserva
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Patent No. 6096545
                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
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ORGANISM: Brassica Nigra
                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/558,735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                            APPLICANT: Wisnewski, Nancy
TITLE OF INVENTION: PARASITIC HELMINTH MACROPHAGE MIGRATION
TITLE OF INVENTION: INHIBITORY FACTOR PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 23
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                 ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                 COUNTRY: UZIP: 80203
                                                                                                                                                                                                                               STREET: 1700 Lincoln Street, Suite 3500 CITY: Denver
                             CLASSIFICATION: 435
                                                  FILING DATE:
                                                                                                                                                                                                                  STATE:
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                                                                                                                                                                                                                                                                ADDRESSEE:
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5681724
Connell, Gary J
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                                                                                                                                                                                               U.S.A.
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Brandt, Kevin S.
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100.0%; Pred. No.
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Pred. No.
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; NAME/KEY:
; LOCATION:
US-08-558-735-10
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Best Local Similarity
Matches 20; Conserv
                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
CCMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/906,480
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/558,735
FILING DATE:
APPLICATION NUMBER: 08/558,735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (303) 863-977
TELEFAX: (303) 863-0223
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Connell, Gary J.
REGISTRATION UNMBER: 32,020
REFERENCE/DOCKET NUMBER: 2618
TELEPONHUNICATION INFORMATION:
TELEPONE: (303) 863-9700
TELEPAX: (303) 863-0223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4711 atcaaaaaaaaaaaaaaa 4730
                                                                                             TELEFAX: (303) 863-02
INFORMATION FOR SEQ ID NO:
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APPLICANT:
APPLICANT:
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REFERENCE/DOCKET NUMBER: 26
TELECOMMUNICATION INFORMATION:
TELEPHONE: (303) 863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 282 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  263 ATCAAAAAAAAAAAAAAA 282
OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 80203
                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH:
                         TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10, Application US/08906480
). 6207158
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Colorado
Y: U.S.A.
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1..103
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Brandt, Kevin S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wisnewski, Nancy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sheridan Ross & McIntosh
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PARASITIC HELMINTH MACROPHAGE MIGRATION INHIBITORY FACTOR PROTEINS, NUCLEIC ACID MOLECULES, AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Street,
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52;
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RESULT

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; LOCATION:
US-08-906-480-10
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US-08-664-596B-25
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                                                     Query Match
Best Local Similarity
Matches 20; Conserv
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                                                                                                                                                                                                                             TELEFAX: (617) 876-5851 INFORMATION FOR SEQ ID NO: 25:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4711 atcaaaaaaaaaaaaaaa 4730
                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Brown, Scott A.
REGISTRATION NUMBER: 32,724
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 498-8224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Treacy, Maurice
APPLICANT: Evans, Cheryl
APPLICANT: Spaulding, Vikki
APPLICANT: Bowman, Michael
TITLE OF INVENTION: SECRETED PROTEINS AND POLYNUCLEOTIDES
TITLE OF INVENTION: ENCODING THEM
             4711 atcaaaaaaaaaaaaaaaaa 4730
                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
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                                                                                                                                         TOPOLOGY: 11
                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 371 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
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 351 ATCANAAAAAAAAAAAAA 370
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                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                     TYPE:
                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/664,596B FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE:
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20; Conservative
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                                                                                                                                                                                     nucleic acid
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LaVallie, Edward
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                                                     0.4%;
llarity 100.0%;
Conservative (
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                                                                                                                                                        linear
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                                                                                                                                            CDNA
                                                                                                                                                                       double
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100.0%; Pr
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Pred. No.
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Pred. No.
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                                                           Mismatches
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                                                                         DB 1;
. 51;
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                                                                                     Length 371;
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RESULT 39
US-08-558-735-1
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NAME: Brown, Scott A.

REGISTRATION NUMBER: 32,724
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 498-8224
TELEPHONE: (617) 876-5851
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 371 base pairs
                                                                                                                                                                                                                                                  Sequence 1, Application Patent No. 5681724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Tripp, Cynthia A.
APPLICANT: Brandt, Kevin S.
APPLICANT: Wisnewski, Nancv
                                                                                                                                                                                                                                                                                                                                                                             4711 atcaaaaaaaaaaaaaaa 4730
                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/739,775
FILING DATE:
CLASSIFICATION:
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APPLICANT:
                                                                                                                              TITLE OF INVENTION:
                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Merberg, David
APPLICANT: Treacy, Maurice
APPLICANT: Spaulding, vikki
TITLE OF INVENTION: SECRETED PROTEINS AND POLYNUCLEOTIDES
TITLE OF INVENTION: ENCODING THEM
                                                                                                                                                                                                                                                                                                                                                          351 ATCAAAAAAAAAAAAAAA 370
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                                                       STREET:
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STATE: Massachus
                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
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                               1700 Lincoln Street, Suite 3500 Denver
Colorado
                                                                                                                                                                                                                                                                   Application US/08558735
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                                                                                                                        Wisnewski, Nancy
NVENTION: PARASITIC HELMINTH MACROPHAGE MIGRATION
NVENTION: IMHIBITORY FACTOR PROTEINS, NUCLEIC ACID MOLECULES, AND
NVENTION: USES THEREOF
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87 CambridgePark Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
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LaVallie, Edward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Racie, Lisa
                                                                Sheridan Ross & McIntosh
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                                                                                                                                                                                                                                                                                                                                                                                                                                            0.4%; Score 20;
100.0%; Pred. No.
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51;
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RESULT 40
US-08-906-480-J
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ATTORNEY/AGENT INFORMATION:
NAME: CONNELL GAITY J.
REGISTRATION NUMBER: 32,020
REFERENCE/DOCKET NUMBER: 2618
TELECOMMUNICATION INFORMATION:
TELEPHONE: (303) 863-9700
TELEFAX: (303) 863-9223
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100 Matches 20; Conservative
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION: APPLICANT: Tripp,
                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION NUMBER: US/08/906,480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                 PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                       CITY: Denver
STATE: Colorado
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 532 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA RELEASE #1.0, Version #1.25
CURRENT APPLICATION DATA:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                       CLASSIFICATION:
                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                           STREET:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                             80203
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6207158
                                                                                                                                                                                                                                                                                         1700 Lincoln
                                                                                                                                                                                                                                                                                                                                                                                                                               Brandt,
                                                                                                                                                                                                                                                                                                                                                                                                               Wisnewski, Nancy
                                                                                                                                                                                                                                                                                                                                                                                                                             Tripp, Cynthia A. Brandt, Kevin S.
                                                                                                                                                                                                                                                                                         Sheridan Ross & McIntosh
00 Lincoln Street, Suite 3500
                                                                                                                                                                                                                                                                                                                                                               USES THEREOF
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100.0%; Pred. No. 50;
tive 0; Mismatches
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AND

REFERENCE/DOCKET NUMBER: 26
TELECOMMUNICATION INFORMATION:

2618-43

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; LOCATION:
US-08-906-480-1
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                                                           US-08-539-304A-1
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Best Local Similarity
Matches 20; Conserv
Query Match
Best Local Similarity
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                                                                                                                                                                                                           TELEFAX: 703-413-2220 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (303) 863-02
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4711 atcaaaaaaaaaaaaaaaa 4730
                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/539,304A
APPLICATION NUMBER: US/08/539,304A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 532 base pairs
                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 615 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: NORMAN, OBLON F
REGISTRATION NUMBER: 24,6
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: FIBER-SPECIFITITLE OF INVENTION: COTTON PLANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: cDNA
                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                        TELEPHONE: 703-413-3000
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                                                                         NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: ARLINGTON
STATE: VA
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TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                              FILING DATE: 04
CLASSIFICATION:
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                                                                                                                                                 STRANDEDNESS:
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100.0%; Pr/
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0.4%;
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Pred. No.
                                                                                                                                                                                                                                                                       2343-037-27
Score 20;
Pred. No.
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 DB 1;
49;
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               Length 615;
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TOPOLOGY:
US-08-451-405A-2
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Patent No. 5736358
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                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                                                                                        Sequence 23,
                                                                                                                                                                                                                                                                                                                                                                                        Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 07/9
FILING DATE: 15-JAN-1993
INFORMATION FOR SEQ ID NO: 2
                                                                                                                                                                                                           GENERAL INFORMATION:
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APPLICANT:
APPLICANT:
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ADDRESSEE: THE WEBB LAW FIRM
STREET: 700 KOPPERS BUILDING, 436 SEVENTH AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: FASEL, NICOLAS JOSEPH
APPLICANT: REYMOND, CHRISTOPHE DOMINIQUE
TITLE OF INVENTION: DICTYOSTELID EXPRESSION VECTOR AND
TITLE OF INVENTION: METHOD FOR EXPRESSING A DESIRED PROTEIN
                                                         TITLE OF INVENTION: GENETIC SEQUENCE
TITLE OF INVENTION: PATHWAY ENZYMES
NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
                                                                                                                                                                         APPLICANT:
APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                           295 ATCAAAAAAAAAAAAAAA 314
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OPERATING SYSTEM: DOS
SOFTWARE: WORDPERFECT 6.1
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STATE: PENNSYLVANIA
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TYDE: NUCLEIC ACID
CTNG
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                CITY:
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                                             ADDRESSEE:
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           SSEE: Scully, Scott, Murphy & Presser
T: 400 Garden City Plaza
Garden City
                                                                                                                                                                                                                          3, Application US/07912900 5349125
New York
                                                                                                                        Holton, Timothy A.
Cornish, Edwina C.
Koyacic, Filippa
Tanaka, Yoshikazu
Lester, Diane R.
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                                                                                           SEQUENCES ENCODING FLAVONOID ENZYMES AND USES THEREFOR
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Pred. No.
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49;
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; MOLECULE TYPE: DNA (genomic) US-07-912-900-23
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US-08-285-309-23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 23, Application US/08285309 Patent No. 5569832
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TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO: 23:
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NAME: D1619110, FTANK S.
REGISTRATION UNMBER: 31,346
REFERENCE/DOCKET NUMBER: 8633
TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 742-4343
TELEFAX: (516) 742-4366
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**COLEULP**

**PE: NUCLEIC ACID
STRANDEDNESS: 81**

**TOPOLOGY: 1'
**OLECULP**

**TOPOLOGY: 1'
**
                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/285,309
FILING DATE: 03-AUG-1994
CLASSIFICATION: 800
                             REGISTRATION NUMBER: 31,346
REFERENCE/DOCKET NUMBER: 8633Z
TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 742-4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: Digiglio, Frank S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
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TITLE OF INVENTION: HYDROXYLASE AND USES
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TELEFAX:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Scully, Scott, Murphy & Presser
STREET: 400 Garden City Plaza
CITY: Garden City
STATE: New York
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Holton, Timothy A. Cornish, Edwina C. Kovacic, Filippa
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49;
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US-08-313-075A-27
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                                                                                                                                                                                                                                                      CLASSIFICATION: 800
CLASSIFICATION DATA:
APPLICATION DATA:
APPLICATION UMBER: AU PL 1538/92
FILING DATE: 27-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION UMBER: AU PL 6698/93
FILING DATE: 07-JAN-1993
PRIOR APPLICATION DATA:
APPLICATION UMBER: AU PCT/AU93/001;
FILING DATE: 25-MAR-1993
ATTORNEY/AGENT INFORMATION:
NAME: D1619110, Frank S.
REGISTRATION NUMBER: 31,346
REGISTRATION NUMBER: 31,346
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Best Local (
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                                                                                                                                TELEFAX: (516) 742-4366
TELEX: 230 901 SANS UR
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
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                  FEATURE:
                                      MOLECULE TYPE:
                                                                                                                                                                                                            TELEPHONE: (516) 742-4343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Holton, Timothy A.
APPLICANT: Cornish, Edwina C.
APPLICANT: Tanaka, Yoshikazu
TITLE OF INVENTION: GENETIC SEQUENCES ENCODING FLAVONOID
TITLE OF INVENTION: PATHWAY ENZYMES AND USES THEREFOR
NUMBER OF SEQUENCES: 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 733 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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                                                                        STRANDEDNESS:
                                                                                            TYPE: nucleic acid
                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/313,075A FILING DATE: 30-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Garden City
STATE: New York
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NAME/KEY:
                                                                                                            LENGTH:
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5. 5639870
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                                                                                                              733 base pairs
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9b_pat: AX193058
9b_pr: AC009269
7b_sts: G36947
9b_htg: AC0022466
9b_pat: AR000910
9b_sts: G34728
9b_htg: AC075673
9b_htg: AC075673
9b_htg: AC0764728
9b_htg: AC076473
9b_htg: AC075673
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gb_htg:AC087699
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Database length: -341344837
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-Q-/G902_1/USPTO_spool/US09750590/runat_10042002_145524_11875/app_query.fasta_1.1480
-Q-/G902_1/USPTO_spool/US09750590/runat_10042002_145524_11875/app_query.fasta_1.1480
-DB-GenEmb1 -QFMT-fastap -SUFFIX-oli.rge -GAPOP-4.500
-GAPEXT-0.050 -MINMATCH-0.100 -LOOPCL-0.000 -XGAPEXT-0.000
-QGAPEXT-0.050 -MINMATCH-0.100 -XGAPOP-60.000 -XGAPEXT-60.000
-FGAPOP-4.500 -GGAPEXT-7.000 -YGAPOP-60.000 -YGAPEXT-60.000
-FGAPOP-6.000 -FGAPEXT-7.000 -YGAPOP-60.000 -YGAPEXT-60.000
-DELEXT-7.000 -START-1 -MATRIX-011go
-TRANS-human40.cdi -LIST-45 -DOCALIGN-200 -THR_SCORE-quality
-THR_MIN-1 -ALIGN-45 -MODE-LOCAL -OUTFMT-pfs NORM-ext
-HEAPSIZE-500 -MINLEN-0 -MAXLEN-200000000
-USER-US09750590_@CGN1_1_7773 -NCPU-6 -ICPU-3 -LONGLOG
-USER-US09750590_@CGN1_1_7773 -NCPU-6 -ICPU-3 -LONGLOG
-USER-US09750590_@CGN1_1_7773 -NCPU-6 -ICPU-3 -LONGLOG
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                                     94 | AC078966 Homo sapiens chromo

22 | AC026950 Homo sapiens chromo

72 | AL512360 Human chromosome 14

93 | AC060775 Homo sapiens chromo

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AUTHORS
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
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Nakamura,S., Ohno,S., Negi,A. and Nishimura,Y.
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LJ5317 Rattus norvegicus cy
RC014339 Drosophila melanog
I S65762 SPTBNI-beta-fodrin (
AF225960 Rattus norvegicus
M74773 Mus musculus brain bi
M96803 Human general beta-si
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ORGANISM
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KEYWORDS
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LOCUS AF322915
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US-09-750-590-2 x AF322916
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 4429)
Yamada,K., Senju,S., Nakatsura,T., Murata,Y., Ishihara,M.,
Nakamura,S., Ohno,S., Negi,A. and Nishimura,Y.
Identification of a novel autoantigen UACA in patients with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF322915 4429 bp mRNA MAM
Bos taurus uveal autoantigen mRNA, complete
AF322915
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Yamada, K., Senju, S. and Nishimura, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Blochem. Blophys. Res. Commun. 280 (4), 1169-1176 (2001)
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seq_name: gb_pr:AB046781
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US-09-750-590-2 x AF322915
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AB046781
                                                      2 (bases 1 to 5520)
Ohara, O., Nagase, T. and Kikuno, R.
Submitted (03-AUG-2000) Osamu Ohara, Kazusa DNA Research Institute
                                      Direct Submission
                                                                                                                          Nagase,T., Kikuno,R., Nakayama,M., Hirosawa,M. and Ohara,O. Prediction of the coding sequences of unidentified human ge XVIII. The complete sequences of 100 new cDNA clones from twhich code for large proteins in vitro DNA Res. 7 (4), 273-281 (2000)
                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
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for KIAA1561 protein,
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REFERENCE AUTHORS

JOURNAL

PUBMED

TITLE

JOURNAL

SOURCE ORGANISM

KEYWORDS

VERSION

REFERENCE

AUTHORS TITLE

DEFINITION ACCESSION

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FEATURES

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BASE COUNT
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US-09-750-590-2 x AB046781
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                 473 eraspGluGlnIleLysGlnLeuGluAspAlaLeuLysAspValGlnLys
                                                                                                                                                                                                                                                                                                                                                                                  456 lAlaGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspS 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   440 SeralaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysVa 456
AGGATGTATGAGTCAGAAGGTAAAGTTAAACAAATGCAGACCCATTTTCT
                                                                                                                                                  ArgMetTyrGluSerGluGlyLysValLysGlnMetGlnThrHisPheLe
                                                                                                                                                                                                                                  CAGATGAACAGATAAAGCAATTAGAAGATGCATTAAAAGATGTGCAGAAG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="PWYSYULDKRNLTHMQDEVNVKSHQREHQNIQDLEIENEDLKER
/translation="PWYSYULDKRNLTHMQDEVNVKSHQREHQNIQDLEIENEDLKER
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LELSLPSQTSYSENEIILKKELEAMKYEESAKQDRLKLQOEGSGLEENLTSEAASGNIRLTEE
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QKEITEKYYLDNKLLKEQAHNLTIEMKHHYVPLKVSEDMKKSHDAIIDDLNRKLLDVTQ
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KKCGEDQEKIHALTSENTULKKNMSNQYVPVKTHEEVKNTLINDTLAKTNKELLDVKK
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KTDELNKQLKDLSSQKYTEVKNVKEKLYEENAKOTSEILAVQNILQKQHYPLEQVERLK
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VGIIKASLREKEEESQNKMETYSKLOSEVQNTKQAKKLLSTREVDLSKYKATKSDLE
TGISSLAEKLANLNRKYEEVCEEVLHAKKEISAKDEKELLHFSLEQEIKDOKERCDK
SLITTITELORRIQESAKQIEAKONKITELLNDVERLKALKLLETREVDUSKYKATKROS
SLITTITELORRIQESAKQIEAKONKITELLNDVERLKALKLETREVDUSKYKATKROS
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/db_xref="GI:10047187"
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/codon_start=1
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/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (04-FEB-2000) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOTE: This record contains 96 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is made to completion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             be preserved.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: leerowen@u.washington.edu
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3525: contig of 880 bp in length
gap of unknown length
gap of unknown length
gap of unknown length
5290: contig of 889 bp in length
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15 clone CTD-3027K24 map 15q23, LOW-PASS
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of 888 bp in length
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15059 14191 13322 12460 11580 10706 9837

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94p of unknown length 4: contig of 882 bp in length gap of unknown length 1: contig of 867 bp in length gap of unknown length gap of unknown length 7: contig of 866 bp in length	of 869 k	gap of unknown lengt gap of unknown lengt contig of 873 bp in gap of unknown lengt	contig of 867 bp in	unknown lengt of 863 bp in	unknown lengt of 871 bp in	ınknown lengt of 866 bp in	gap o	gap o	gap of unknown length 37: Contig of 876 bp in length	gap of unknown length	gap of unknown length 37: contig of 868 bp in length	gap of unknown length 19: contig of 866 bp in length	9ap of unknown length	gap of unknown length B3: contig of 864 bp in length	gap of unknown length 19: contig of 864 bp in length	55: contig of 869 bp in length	gap of unknown length 86: contig of 870 bp in length	94P of unknown length 16: contig of 885 bp in length	unknown lengt of 875 bp in	unknown lengt of 867 bp in	unknown lengt of 876 bp in	unknown lengt of 865 bp in	unknown lengt of 868 bp in	unknown lengt of 878 bp in	unknown lengt of 879 bp in	gap or unknown length  23: contig of 865 bp in length	58: contig of 868 bp in length		121: config of 862 bp in length	39: contig of 880 bp in length	9/9: contig of 874 bp in length	05: contig of 869 bp in length gap of unknown length
Align seg 1/1 to reverse of: AC022466 from: 1 to: 83775  440 SeralaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysVa 456	allgnment_block: US-09-750-590-2 x AC022466/rev	Quality: 75.00 Length: 75 Ratio: 1.000 Gaps: 0 Percent Similarity: 100.000 Percent Identity: 100.000	* 66347 67207; contig of 861 bp in length	66346: contig	of 863 b	nown lengt	inknown lengt of 871 bp in	gap of unknown lengt contig of 888 bp in	gap of unknown lengt contig of 857 bp in	unknown lengt of 877 bp in	* 59405 60263: contig of 859 bp in length	* 58530 59404: contig of 875 bp in length	* 57670 58529: contrig of 80% religion	* 56777 57669: contig of ength length	* 55911 56776: contig of 866 b the length	* 55054 55910: contig of 857 b to length	* 54190 55053: conf of mixed length	* 53324 54189: contig of 866 kp length	* 52461 53323: contig of 863 by length  app of inknown length	of 872	* 50730 51588: contig of 859 bp in length	e n					of 867 b	of 863 b	of 874 b	43801:	gap of unk	~

27254

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26384 25520 24656 23787 22917 22032 21157 20290 19414 18549 17681

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41202 40335 39453 38584 37688

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36814:

37687:

39452: 38583: 35082 34219 33348 32482 31602 30738 29862

35081: 35948:

34218: 33347: 32481: 31601: 30737: 29861: 28987:

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dodge, S., Paro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Juyen, C., Norbu, C., Norman, C.H., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C.H., Nurphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C.H., Nihoya, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raynond, C., Retta, R., Ribeback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Travis, N., Trigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zainoun, J., Vembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCCTTAAAGAACACTTAACAAGT 21270
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 148041)
Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S.
Barna, N., Bastlen, V., Boguslavkiy, L., Boukhgalter, B., Brown, A.,
Camarata, J., Campopiano, A., Choepel, Y., Colangelo, M., Collins, S.,
Collymore, A., Cooke, P., DeArallano, K., Dewar, K., Diaz, J.S.,
Collymore, A., Cooke, P., DeArallano, K., Dewar, K., Diaz, J.S.,
                                                                                                                                                                                                                                                                                                                                                                  Submitted (15-JAN-2001) whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Mar 3, 2001 this sequence version replaced gi:12229508.

All repeats were identified using RepeatMasker:
smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 148041)

Birren,B., Linton,L., Nusbaum,C. and Lander,E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
------- Summary Statistics
Sequencing vector: Plasmid; n/a; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
                                                                                                    Center clone name: 64_K_1
                                                                                                                                 Center project name: L5158
                                                                                                                                                                 Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                            Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                         Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                ---- Genome Center
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FEATURES
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                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to reverse of: AC087699 from: 1 to: 148041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-750-590-2 x AC087699/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity: 100.000
                                                                                                                                                                                                                                                      128090 GGCAGAATGCAAAGCTTTAGCATTAGAATGTGAAAGGGTCAAGGAGGATT 128041
                                                                                                                                                                                                                                                                                                                                              128140 TCAGCAAAACAAGACCGACTGAAGCTCCAAAATGAACTGGCACACAAAGT
                                                                              127990 AGGATGTATGAGTCAGAAGGTAAAGTTAAACAAATGCAGACCCATTTTCT
                                                                                                                                                                                                                                                                                                                                                               440 SerAlaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysVa 456
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                                                                                                                                                                                                                                                                               456 lAlaGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspS 473
                                      506 uAlaLeuLysGluHisLeuThrSer 514
                                                                                                                                                                   ArgMetTyrGluSerGluGlyLysValLysGlnMetGlnThrHisPheLe
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Consensus quality: 146524 bases at least Q40 Consensus quality: 147238 bases at least Q30 Consensus quality: 147647 bases at least Q20 Insert size: 149000; agarose-fp Insert size: 149801; sum-of-contigs Quality coverage: 10.3 in Q20 bases; agarose-quality coverage: 10.4 in Q20 bases; sum-of-contigs
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88774 88873:
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/note="assembly_fragment
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/map="15"
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/db_xref="taxon:9606"
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438: gap of 100 bp
88773: contig of 70335 bp in length
8873: gap of 100 bp
148041: contig of 59168 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Identity:
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100.000
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sum-of-contigs
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REFERENCE
AUTHORS
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AUTHORS
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KEYWORDS
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LOCUS AC010076 1
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JOURNAL
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                                                                     * NOTE: This is a 'working draft' sequence. It currently consists of 19 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

* This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* This sequence will be preserved.

* This sequence will be preserved.

* Jaya68 squence as soon as it is available and the accession number will be preserved.

* Jaya69 1 39468 contig of 39368 bp in length 43957 44056 gap of unknown length 52135 contig of 4488 bp in length 52135 contig of 6079 bp in length 52135 contig of 6079 bp in length 54093 54092 contig of 4457 bp in length 54793 58291 contig of 3499 bp in length 58392 58391 gap of unknown length 58392 58391 gap of unknown length 58392 58391 gap of unknown length 58392 58391 contig of 3399 bp in length 58392 58391 contig of 3499 bp in length 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 58392 5839
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This entry has been annotat
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Rowen, L., Madan, A., Qin, S., Baradarani, L., Birditt, B., Bloom, S., Dors, M., Dickhoff, R., Fleetwood, P., Harrison, G., Kaur, A., Madan, A., Nesbitt, R., Traicoff, R. and Hood, L.

Sequencing of human chromosome 15 D15S114-D15S115 region
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Homo sapiens chromosome 15 clone RP11-64K10,
SEQUENCE, 19 ordered pieces.
ACC10076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality levels above 40 are expected to have less than 1 error in 10,000 bp.
Base-by-base quality values are not generally visible from the GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This entry has been annotated with sequence quality estimates computed by the Phrap assembly program.

All manually edited bases have been reduced to quality zero.
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HTG: HTGS_PHASE2; HTGS_DRAFT.
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Chemistry: Dye-terminator Big Dye; 90% of reads
Chemistry: Dye-primer Big Dye; 10% of reads
Chemistry: Dye-primer Big Dye; 10% of reads
Assembly program: Phrap; version 0.990399
Insert size: 150000; agarose-fp
Quality coverage: 4.6x in Q20 bases; sum-of-contigs
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WORKING DRAFT
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LOCUS CFC3VS
                                                                                                                      DEFINITION
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US-09-750-590-2 x AC010076/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
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/db_xref="taxon:9606"
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gap of unknown length
contig of 5832 bp in length
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Submitted (06-JUL-1996) V. Savonet, Institute of Interdisciplinary Research - ULB, Building C (local C4-124), Campus Erasme, Route de Lennik 808, 1070 Brussels, BELGIUM revised by [3]
3. (bases 1 to 4643)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identification and characterization of novel genes modulated in the thyroid of dogs treated with methimazole and propylthiouracil J. Biol. Chem. 271 (45), 28451-28457 (1996) 97067069 to 4643)
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1 (bases 1 to 4643)
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On Oct 21, 2000 this sequence version replaced g1:1429313
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/db_xref="taxon:9615"
/tissue_type="thyroid"
/clone_lib="lambda ZAPII"
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ERCDKSLTTITELQKRIQESAKQIEAKDNKITELLNDVERLKQALSGLSQLTSPSGSP
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                        134 oSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaLysA 151
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Sequence 1839 from Patent WOO102568.
AXO71367
                                                                                                                                                                                                                                                                                                                                                                       Human genes and gene expression products patent: WO 0102568-A 1839 11-JAN-2001; CHIRON CORPORATION (US); HYSEQ, INC. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 371)
                                                                                                                                                                                                                                                                                                                                                                                                                                  Kassam,A., Reinhard,C., Randazzo,F., Kennedy,G.C., Pot,D.,
Lamson,G., Drmanac,R., Crkenjakov,R., Drmanac,S., Dickson,M.,
Labat,I., Leshkowitiz,D., Kita,D., Garcia,V. and Strache-Crain,B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Williams, L.T., Escobedo, J., Innis, M.A., Garcia, P.D.,
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/db_xref="taxon:9606"
79 c 98 g 87
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KEYWORDS
SOURCE
ORGANISM
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                                                                              REFERENCE
                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS AX193084
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US-09-750-590-2 x AX071358
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LOCUS AX071358
DEFINITION Sequence 1830
ACCESSION AX071358
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Eukaryota; Metheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 401)

IRS Williams, L.T., Escobedo, J., Innis, M.A., Garcia, P.D., Klinger, J., Kassam, A., Reinhard, C., Randazzo, F., Kennedy, G.C., Pot, D., Lamson, G., Drmanac, R., Crkenjakov, R., Drmanac, S., Dickson, M., Labat, I., Leshkowitiz, D., Kita, D., Garcia, V. and Strache-Crain, B. Human genes and gene expression products

Human genes and gene expression products

Patent: WO 0102568-A 1830 11-JAN-2001;

CHIRON CORPORATION (US); HYSEQ, INC. (US)

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                            ATGTAGACGGGCGGACACCACTTGTTCTGGCTACTCAGATG 185
                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTAGCATACAGCTGCTTTGTGACCATGGGGCCTCTGTGAATGCCAAAG
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                                                                                                                                                                                                             Sequence 651 from Patent WO0149716. AX193084
      1 (bases 1 to 441)
Xu,J., Lodes,M.J., Secrist,H., Benson,D.R., Meagher,M.J.,
Stolk,J.A., King,G.E., Wang,T. and Jiang,Y.
Compounds for immunotherapy and diagnosis of colon cancer and
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Ratio:
                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Homo sapiens
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Sequence 1830 from Patent WO0102568.
AX071358
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85 c 107 g
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Gaps: 0
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US-09-750-590-2 x AX192628
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US-09-750-590-2 x AX193084
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Ratio: 1.000
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64 SerLysGlyAsnLeuGluCysLeuAsnAlaIleLeuIleHisGlyValAs
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Ratio:
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Patent: WO 0149716-A 195 12-JUL-2001;
CORIXA CORPORATION (US)
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                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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/db_xref="taxon:9606"
101 c 125 g 8
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/db_xref="taxon:9606"
97 c 114 g 10;
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Anderson, M.,

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seq_documentation_block:
LOCUS AX193058
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LOCUS AC009269 1
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Ratio: 1.000
Percent Similarity: 100.000
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Sequence 625 from Patent W00149716.
AX193058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xu,J., Lodes,M.J., Secrist,H., Benson,D.R., Meagher,M.J., Stolk,J.A., King,G.E., Wang,T. and Jiang,Y. Compounds for immunotherapy and diagnosis of colon cancer and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent: WO 0149716-A 625 12-JUL-2001; CORIXA CORPORATION (US)
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1 (bases 1 to 421)
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               Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 172850)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 15, clone RP11-138H8
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                                                                                                                                                                                                                                                                                  Homo sapiens chromosome AC009269
                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                      AC009269.6 GI:13194974
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15, clone RP11-138H8, complete sequence.
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Direct Submission

Direct Submission

Michael M., Marten, A., Tarter, A., and Zody, M.
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Baker, J., Baldwin, J., Barna, N., Beckerly, R., Benn, J., Brown, A.,
Castle, A., Cerny, J., Colangelo, M., Collins, S., Collymore, A.,
Castle, A., Cerny, J., Colangelo, M., Collins, S., Collymore, A.,
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Hagos, B., Heaford, A., Horton, L., Howland, J.C., Jones, C., Kann, L.,
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Naylor, J., Niloff, M., O'Connor, T., O'Donnell, P., Pavlin, B.,
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Stange-Thomann, N., Stojanovic, N., Stone, C., Subramanian, A.,
Tesfaye, S., Torruella-Miller, I., Vassillev, H., Vo, A., Wagner, A.,
Wheeler, J., Wall, X., Wyman, D., Ye, W.J. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission Submitted (11-AUG-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 172850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (24-MAR-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA on Mar 4, 2001 this sequence version replaced g1:12745100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 172850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: sequence_submissions@genome.wi.mit.edu
------ Project Information
Center project name: L1277
Center clone name: 138_H_8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center code: WIBR web site: http://www-seq.wi.mit.edu
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ACCESSION G36947.1 GI:2
VERSION G36947.1 GI:2
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SOURCE human.
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Percent Similarity: 100.000
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Gaps: 0
Percent Identity: 100.000
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                                                                                                                                                                                                                                                                                                                                         alignment_scores:
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TITLE
                                                                                                                                                                                          Align seg 1/1 to reverse of: G36947
                                                                                                                                                                                                                               US-09-750-590-2 x G36947/rev
                                                                                                                                                                                                                                                                                  Quality: 25.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                           1156 LysGluAlaPheGluLysGluValGlyIleIleLysAlaSerLeuArgG1 1172
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
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                                                 90
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Stanford Human Genome Center (SHGC)
Stanford University School of Medicine
Department of Genetics, M-344, Stanford, CA 94305, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: myers@shgc.stanford.edu
primer A: ATGCTCTGCCAGGGGTACAG
Primer B: GGAACGAGGTTGAGGCTCTG
STS size: 167
PCR Profile:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 418)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Myers, R.M.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Prepared with primer pairs derived Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dNTPs:
Amplifaq Gold Polymerase:
Total Vol:
                                                                                                                                                                                                                                                                                                                                                                                                                                                /map="15"
/clone_lib="Human"
151. .317
151. .170
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polymerization:
PCR Cycles:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .418
                                                                                                                                                                                                                                                                                Length: 25
Gaps: 0
Percent Identity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       * NOTE: This record contains 96 individual

* sequencing reads that have not been assembled into

* contigs. Runs of N are used to separate the reads

* and the order in which they appear is completely

* arbitrary. Low-pass sequence sampling is useful for

* identifying clones that may be gene-rich and allows

* overlap relationships among clones to be deduced

* However, it should not be assumed that this clone

* will be sequenced to completion. In the event that

* the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rowen,L., Madan,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Bloom,S., Dors,M., Dickhoff,R., Fleetwood,P., Harrison,G., James,R., Kaur,A., Madan,A., Owen,M.P., Ratcliffe,A., Shaffer,T. and Hood,L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rowen,L., Madan,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Bloom,S., Dors,M., Dickhoff,R., Fleetwood,P., Harrison,G., James,R., Kaur,A., Madan,A., Owen,M.P., Ratcliffe,A., Shaffer,T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens chromosome SEQUENCE SAMPLING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (04-FEB-2000) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing of human chromosome 15 D15S146-D15S117 region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 83775)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Hood, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_PHASEO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC022466.1 GI:6899623
                                                                                                                                                                                                                                                                                                                                                                                                                                                        be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: pUC18; L08752
Chemistry: Dye-terminator Big Dye; 90% of reads
Chemistry: Dye-primer Big Dye; 10% of reads
Assembly program: Phrap; version 0.990399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://chroma.mbt.washington.edu/msg_www
Contact:.leerowen@u.washington.edu
------ Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Multimegabase Sequencing Center Center code: UWMSC
   10706
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                                                                                                                                                                                                                                                                                                                              2646
                                                                                                                                                                                                                                                                                                                                                                                                     888
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     11579:
                                                                                                            8948:
                                                                                                                                                                                                                                                                                                                                                                                                   gap of unknown length
1780: contig of 893 bp in length
                                                                                                                                                                                                                     6155:
                                                                                                                                                                                                                                                         5290:
                                                                                                                                                                                                                                                                                            4401: conti
                                                                                                                                                                                                                                                                                                                                3525: conti
                                                                                                                                                                                                                                                                                                                                                                gap of unknown le
2645: contig of 865 bp
                                                                                                                                                                                   7151:
                                                                                                                                                                                                                                                                                                                                                                                                                                         887: contig of 887 bp in length
gap of unknown length
5 contig of 885 bp in length
9ap of unknown length
3: contig of 912 bp in length
9ap of unknown length
5 contig of 888 bp in length
6 contig of 888 bp in length
9 contig of 888 bp in length
9 contig of 869 bp in length
9 contig of 874 bp in length
                                                                                                                                                                                         contry --
gap of unknown length
contig of 865 bp in length
-- -- inknown length
                                                                                                                                                                                                                                                                                                         gap of unknown length
contig of 880 bp in le
gap of unknown length
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15 clone CTD-3027K24 map 15q23, LOW-PASS
                                                                                                                                                                                                                                                                                            lg of 876 bp in length
                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                   length
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                                                                                                                                                                                                                                                       in length
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17681 18549

21156:

gap of unknown length
gap of unknown length
l: contig of 880 bp in length
gap of unknown length
O: contig of 862 bp in length
gap of unknown length
contig of 878 bp in length
gap of unknown length
his contig of 868 bp in length
gap of unknown length
contig of 867 bp in length
gap of unknown length
contig of 870 bp in length
gap of unknown length
gap of unknown length
contig of 870 bp in length
gap of unknown length
gap of unknown length
scontig of 864 bp in length
gap of unknown length
contig of 864 bp in length
gap of unknown length
gap of unknown length
scontig of 864 bp in length
gap of unknown length
gap of unknown length
gap of unknown length
gap of unknown length
contig of 866 bp in length
gap of unknown length

15058: 15923: 16802: 16806: 17680: 18548: 19413:

15924 16803 14191 15059 11580 12460 13322

12459:

				-																					-						
1300 sAspAsnLys 1303           56 AGATAATAAG 65	1284 ThrGluLeuGlnArgArgIleGlnGluSerAlaLysGlnIleGluAlaLy 	Align seg 1/1 to: AC022466 from: 1 to:	alignment_block: US-09-750-590-2 x AC022466	Percent Similarity: 100.00 Percent Id	* 66347 67207: contig	65488 66346: contig	* 64625 65487; contig	* 63757 64624: contig	* 62886 63756: contig	* .61998 62885; contig	* 61141 61997: contig	* 60264 61140: contig	* 59405 60263: contig	* 58530 59404: contig c	* 57670 58529; contig	* 56777 57669; contig	* 55911 56776: contig c	* 55054 55910: contig	* 54190 55053: contig	* 53324 54189: contig	* 52461 53323: contig	* 51589 52460: contig	* 50730 51588: contig	* 49867 50729: contig		* 48140 48999: contig	* 47270 48139: contie	* 46406 47269; contin		* 43802 44675; contist * apn of	* 42934 43801: contig
	aLysGlnIleGluAlaLy 1300 	: 83775		Length: 20 Gaps: 0 Identity: 100.000	of 861 bp in length	of 859 bp in length	of 863 bp in length	of 868 bp in length	of 871 bp in length	of 888 bp in length	of 857 bp in length	of 877 bp in length	of 859 bp in length	of 875 bp in length	of 860 bp in length	of 893 bp in length	of 866 bp in length unknown length	of 857 bp in length	of 864 bp in length	g of 866 bp in length f unknown length	of 863 bp in length	of 872 bp in length	of 859 bp in length	of 863 bp in length		of 860 bp in length	of 870 bp in length	of 864 bp in length		of 874 bp in length	of 868 bp in length

40335 41202

39453 38584 37688 36815 35949 35082 34219 33348 32482 31602 30738 29862 28988 28120 27254 26384 25520 24656 23787 22917 22032 21157 20290 19414

40334:

39452:

gap of unknown length
3: contig of 867 bp in length
4: contig of 866 bp in length
9ap of unknown length
7: contig of 873 bp in length
9ap of unknown length
7: contig of 873 bp in length
9ap of unknown length
3: contig of 896 bp in length
9ap of unknown length
2: contig of 869 bp in length
9ap of unknown length
4: contig of 882 bp in length
9ap of unknown length
1: contig of 867 bp in length
9ap of unknown length
7: contig of 866 bp in length
9ap of unknown length

36814:

37687:

35948:

35081:

gap of contig

34218:

33347:

gap of contig gap of contig gap of contig

of unknown length
g of 864 bp in length
of unknown length
lg of 880 bp in length
lg of 866 bp in length
g of 866 bp in length
of unknown length
of unknown length
of unknown length
g of 871 bp in length
g of 873 bp in length
of unknown length
of unknown length
of unknown length

30737: 31601: 32481:

gap of

28987: 29861:

gap of contig gap of contig

unknown length
of 874 bp in length
unknown length
of 876 bp in length

22031: 22916: 23786: 23785: 24655: 25519: 25383: 27253: 28119:

38583:

42068

41201: 42067: 42933:

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SOURCE
ORGANISM
                                                                                                TITLE
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us-09-750-590-2 x AR003316
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Percent Similarity: 100.000
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                                                            AUTHORS
TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Methods and reagents for the identification and regulation of senescence-related genes
Patent: US 5744300-A 38 28-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 38 from patent AR003316
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AK000990 1628 bp mRNA PRI 22-FEB-2000 Homo sapiens cDNA FLJ10128 fis, clone HEMBA1002997, weakly similar to CENTROMERIC PROTEIN E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
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                                                                                                                                                       Isogal T., Ota, T., Hayashi, K., Sugiyama, T., Otsuki, T., Suzuki, Y., Nishikawa, T., Nagai, K., Sugano, S., Shiratori, A., Sudo, H., Wagatsuma, M., Hosoiri, T., Kaku, Y., Kodaira, H., Kondo, H., Sugawara, M., Takahashi, M., Chiba, Y., Ishida, S., Murakawa, K., Ono, Y., Takiguchi, S., Watanabe, S., Kimura, K., Murakami, K., Ishii, S., Kawai, Y., Saito, K., Yamamoto, J., Wakamatsu, A., Nakamura, Y., Nagahari, K., Nasuho, Y., Ninomiya, K. and Iwayanagi, T.
                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                    oligo capping; fis (full insert sequence). Homo sapiens embryo, 10 weeks whole embryo, mainly head cDNA to mRNA, clone_lib:HEMBA1 clone:HEMBA1002997.
                                                                                                                                                                                                                                                                                                                                                                                                                                               AK000990.1 GI:7021992
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unclassified
Direct Submission Submitted (16-FEB-2000) to the DDBJ/EMBL/GenBank databases. Takao Isogqai, Helix Research Institute, Genomics Laboratory; 1532-3 Yana Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hri.co.jp,
                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                  Unpublished (2000)
2 (bases 1 to 1628)
                                                                                                                                                                                                                                                                                                      1 (sites)
                                                                                  Isogai, T. and Otsuki, T.
                                                                                                                                          NEDO human cDNA sequencing project
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                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                    DEFINITION ACCESSION
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ORIGIN
                           COMMENT
                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                            KEYWORDS
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                                                JOURNAL
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COMMENT
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US-09-750-590-2 x AK000990
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LOCUS G14728
                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_sts:G14728
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Ratio: 1.000
Percent Similarity: 100.000
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NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing and clone selection: Helix Research Institute (supported by Japan Key Technology Center Helix Research Institute (supported by Japan Key Technology Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                University of Tokyo.
                                                                                                                                                                                                                                                                                                                         G14728 250 bp
human STS SHGC-13439
                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                    STS sequence; primer; sequence tagged site
                                                                                                                                                                                                                                                                                               G14728
                   1 (bases 1 to 250)
Myers, R.M.
                                                                                                     Eukaryotae; mitochondrial eukaryotes; Metazoa; Chordata;
Vertebrata; Gnathostomata; Osteichthyes; Sarcopterygii; Choanata;
Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Archonta; Primates;
                                                                                                                                                                                                                                                                      G14728.1 GI:1130467
Unpublished (1995)
                                                                            Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AK000990
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//PIOLEII_1d.*BAA91457.1*
//db_xref="GI:7021993"
//translation-"Merehekslseirolkrelenvkaklaohvkpeeheovksrleo
ksgelcakitelteltekvolokeiekvyldnkllkeoaanultiemknhyvplkysedmk
kshdaiiddlnrklldvtokytekklemeklllendslskovsrletvfyppekheke
iialksmivelkkolselkkkcgedoekihaltsentmikkkhasoyvpvyktheevkh
tludtlaktnrelldvkkkfedinoperykikbkeilkrellentonoikaeyislaevkh
tludtlaktnrelldvkkkfedinoperykikbkeilkrellentonoikaeyislaevkh
eakmsslsosmekvodsmaeilanyrkogeeivtlhaeikaokkeldtioecikvkya
pivsfebcerkrkatekelkoolseogokysysseeevkknkoendklkkeifflokdu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \label{local} VQNLLQKQHVPLEQVEALKKSLNGTIENLKEELKSMQRCYEKEQQTVTKLHOLLENOK\\ NSSVPLAEHLQIKEAFEKEVGIIKASL*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="embryo, 10 weeks"
/tissue_type="whole embryo, mainly head"
/note="cloning vector: pME18SFL3"
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/clone="HEMBA1002997"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RDKTYLIEKSHEMERALSRKTDELNKOLKDLSQKYTEVKNYKEKLVEENAKQTSEILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="unnamed protein product"
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Gaps: 0
Percent Identity: 100.000
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Contact: Richard M. Myers

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primer_bind
primer_bind
BASE COUNT
ORIGIN
                          REFERENCE
AUTHORS
TITLE
                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
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Quality: 13.00
Ratio: 1.000
Percent Similarity: 100.000
COMMENT
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LOCUS G58616
                                                                                                                                                                                                                                                                                                                                  alignment_block:
US-09-750-590-2 x G14728/rev
                                                                                                                                                       DEFINITION
ACCESSION
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           JOURNAL
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                                                                                                                                                   G58616 541 bp DNA
SHGC-104638 Human Homo sapiens
G58616
        Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 541)
01ivier, M. and Cox, D.R.
Unpublished, Olivier, M., Cox, D.R. (2000)
                                                                                                                           STS.
                                                                                                                                    G58616.1 GI:6123785
                                                                                                             human.
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Primer B: TGGATGAAGATGTTCAGGAGG
STS size: 148
PCR Profile:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stanford Human Genome Center (SHGC)
Stanford University School of Medicine
Department of Genetics, M-344, Stanford,
Tel: 4157259687
Fax: 4157259689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: myers@shgc.stanford.edu
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KCl:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Taq Polymerase:
Total Vol:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
22. .169
22. .40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       with primer pairs derived from T47625--Merck/UniEST Location/Qualifiers
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PCR Cycles:
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63 c 56 g
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Percent Identity: 100.000
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10 ul
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8.3
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64 degrees C
72 degrees C
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Perkin Elmer
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for 23
for 30
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BASE COUNT 2:
ORIGIN
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VERSION
KEYWORDS
SOURCE
                               REFERENCE
                                                                                                                                           seq_documentation_block:
LOCUS AC071902 688 bp DNA HTG 06-JUN-2000
DEFINITION Giardia intestinalis clone KJ4902 strain WB-C6, LOW-PASS SEQUENCE
SAMPLING.
                                                                                                                                                                                                                                                                                                                                                 alignment_block:
US-09-750-590-2 x G58616/rev
                                                                                                                                                                                                                        seq_name: gb_htg:AC071902
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                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                            ORGANISM
                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Michael Olivier, David R. Cox Stanford Human Genome Center Stanford University School of Medicine 4005 Miranda Ave. 2nd Fl., Palo Alto, CA Tel: (650) 320-5800 Fax: (650) 320-5801 Email: olivier@singc.stanford.edu Primer B: ANTATCTTTGCCAAGTTCATGCC STS size: 282 PCR Profile:
ACO/1902.1 GI:8277943
ACO/1902.1 GI:8277943
HTG: HTGS_PHASED.
Giardia Intestinalis.
Giardia intestinalis
Eukaryota; Diplomonadida; Hexamitidae; Giardiinae; Giardia.
1 (bases 1 to 688)
Morrison, H.G., McArthur, A.G., Nixon, J., Eakin, N.Q., Kim, U.,
                                                                                                                             AC071902
                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAC ends sequenced at TIGR from the RPCII1 BAC library. Designed and developed at the Stanford Human Genome Center.

Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="15"
/clone_lib="Human"
225 506
225 248
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1.000
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Thermal Cycler:
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Annealing:
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97 c 54 g
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                                                                                                                                                                                                                                                                                                                                                                                           Length: 11
Gaps: 0
Percent Identity: 100.000
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50 mM
10 mM
8.3
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94 degrees C for 30
60 degrees C for 30
72 degrees C for 20
30
Perkin Elmer 9700
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REFERENCE
AUTHORS
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ORIGIN
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                                            COMMENT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (06-JUN-2000) Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Giardia intestinalis
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Giardia intestinalis
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                                                            Submitted (31-JUL-2000) Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015, USA
                                                                                                                                                Eakin,N.Q., Morrison,H.G., McArthur,A.G., Nixon,J., Kim,U
Crocker,M.C., Hinkle,G., Holder,M.E. and Sogin,M.L.
                                                                                                                                                                                                      Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                        Bukaryota; Diplomonadida; Hexamitidae; Giardiinae; Giardia.
1 (bases 1 to 932)
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NOTE: This record contains 1 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads
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/db_xref="taxon:5741"
/clone="KJ4902"
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                                                                                                        Molecular Biology and Evolution, Marine Biological Laboratory, 7
MBL Street, Woods Hole, MA 02543-1015, USA
* NOTE: This record contains 1 individual
* sequencing reads that have not been assembled into
* contigs. Runs of N are used to separate the reads
* and the order in which they appear is completely
* arbitrary. Low-pass sequence sampling is useful for
* identifying clones that may be gene-rich and allows
* overlap relationships among clones to be deduced.
* However, it should not be assumed that this clone
* will be sequenced to completion. In the event that
* the record is updated, the accession number will
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Giardia intestinalis
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Crocker,M.C., Hinkle,G., Holder,M.E. and Sogin,M.L.
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/strain="WB-C6"
/db_xref="taxon:5741"
/clone="EJ7590"
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/organism="Giardia intestinalis"
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                                                                                                                                                                                                                                                                                                                                                                                             L Submitted (07-JUN-2000) Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015, USA
*NOTE: This record contains 1 individual
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* and the order in which they appear is completely
* arbitrary. Low-pass sequence sampling is useful for
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* overlap relationships among clones to be deduced.
* However, it should not be assumed that this clone
* will be sequenced to completion. In the event that
* the record is updated, the accession number will
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Morrison, H.G., McArthur, A.G., Nixon, J., Eakin, N.Q., Kim, U., Crocker, M.C., Hinkle, G., Holder, M.E. and Sogin, M.L.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Giardia: a model for ancient eukaryotic genome analysis
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/strain="WB-C6"
/db_xref="taxon:5741"
/clone="MJ4258"
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/clone="KJ4116"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCATGCGGGCTGCAGAAAGAGGTGACGTAGAG 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (01-MAR-1999) Joint Genome Institute, Lawrence Livermore National Laboratory, 7000 East Ave., Livermore, CA 94551, USA Map and sequence oriented from p telomere to centromere. Cosmid R33243 overlaps cosmid R33590 (AC005620) to the 1eft from bases 1 to 1,988 of this accession, and overlaps cosmid F20887 (AC005578) to the right from bases 33,115 to 41,055. Additional chromosome 19 map and sequence information may be obtained at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lamerdin, J.E., McCready, P.M., Skowronski, E., Viswanathan, V., Burkhart-Schultz, K., Gordon, L., Dlas, J., Ramirez, M., Stilwagen, S., Phan, H., Velasco, N., Do, L., Regala, W., Terry, A., Garnes, J., Danganan, L., Erler, A., Christensen, M., Georgescu, A., Avila, J., Liu, S., Attix, C., Andreise, T., Trankheim, M., Amico-Keller, G., Coefield, J., Duarre, S., Lucas, S., Bruce, R., Thomas, P., Quan, G., Kronmiller, B., Arellano, A., Sanders, C., Ow, D., Nolan, M., Trong, S., Kobayashi, A., Olsen, A.S. and Carrano, A.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://www-bio.llnl.gov/bbrp/genome/genome.html.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 41055)
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AC006930
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 41055)
Lamerdin, J.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence analysis of a 6 Mb region in 19p13.3 between CDC34 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
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                                                                                                                                                                                                     /note-"BLASTN similarity to overlapping ESTs:
/note-"BLASTN similarity to overlapping ESTs:
AA890113 a153b02.s1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA
clone IMAGE:1461003 3' similar to contains PTR5.t2 MER25
repetitive element; mRNA sequence [Homo sapiens];
(102. 188); Score: 6.8e-66; 100% identity.-AA906192
(199405.s1 Soares_NFL_T_GBC_S1 Homo sapiens CDNA clone
IMAGE:1506345 3' similar to TR:028597 O28597
TRANSCRIPTIONAL REGULATORY PROTEIN, SIR2 FAMILY; mRNA
sequence [Homo sapiens]; Length = 376; (102. 188); Score:
2.8e-107; 100% identity.-"
complement()oin(199. .243,438. .740,822. .945,1474. .1602, 1636. .1731,2873. .2932,4898. .5080,6572. .6699,8264. .8329))
//note="Hypothetical human SIR2-11ke protein; Replaces protein encoded by R33590_2 (gi|3548790). Hypothetical protein displays similarity (24%) to the yeast transciptional silencer SIR2 (encoded by P06700) and putative SIR2- related proteins in multiple species"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        carries chromosome 19 as its only human chromosome."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Cosmid library constructed at LLNL from flow-sorted chromosomes from human-hamster hybrid 5HL2-B, which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /map="19p13.3 between CDC34 and D19S325"
/cell_line="5HL2-B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="R33243"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="LL19NC03 R chromosome 19-specific cosmid
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AND SIMILARITY TO OVERLAPPING ESTS:

(4907. 4996) AA890113 a153b02.sl Soares_NFL_T_GBC_Sl Homo
sapiens cDNA clone IMAGE:1461003 3' similar to contains
pTR5.t2 MER35 repetitive element; mRNA sequence [Homo
sapiens]; (187. 276); Score: 6.88-66; 1008

identity.-(4907. 5096) AA906192 oj98d05.sl
Soares_NFL_T_GBC_Sl Homo sapiens cDNA clone IMAGE:1506345
Soares_NFL_T_GBC_Sl Homo sapiens cDNA clone IMAGE:1506345
3' similar to TR:028597 028597 TRANSCRIPTIONAL REGULATORY
PROTEIN, SIR2 FAMILY; mRNA sequence [Homo sapiens]; Length

-376; (187. 376); Score: 2.8e-107; 1008 identity.-"
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RVGLLRELVSQNVDGLHVRSGEPRDKLAELHGNMFVEECAKCKTQYVRDTVVGTMGLK
ATGRLCTVAKARGLRACRGGCEAPEDSFQLPHCRGELRDTILDWEDSLPDRDLALADE
ASRNADLSITLGTSLOIRPSGNLPLATKRRGGRLVTVNLQPTKHDRHADLRIHGYVDE
VMTRLMKHLGLEIPAMDGPRVLERALPPLPRPPTPKLEPKEESPTRINGSIPAGPKQE
VMTRLMKHLGLEIPAMDGPRVLERALPPLPRPPTPKLEPKEESPTRINGSIPAGPKQE
PCAQHNGSEPASPKRERFTSPAPHRPPKRGPLVRFREEATPQR*
                                                                                                                                                                                                                                                                             /rpt_family="Alu8g/x"
complement(6175, .6414)
/rpt_family="1"
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2416. .2630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(5035. .5076)
/note="TBLASTX identity to AA839912 vw66a07.rl Stratagene mouse heart (#937316) Mus musculus cDNA clone IMAGE:1259892 5', mRNA sequence [Mus musculus]; (198. .239); Score: 1.8e-39; 100% identity.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="BLASTN similarity to U46339 HSU46339 Human pancreatic cancer cell line Patu 8988t Homo sapiens cDNA clone xs346, mRNA sequence [Homo sapiens]; Length = 295; [214. .295); Score: 1.0e-104; 84% identity.
                    /rpt_family~"LINE2"
7185. .7284
                                                                              6831.
                                                                                                                                                                                                                                                                                                                                                                                  /rpt_family="(GA)n"
5260. .5367
/rpt_family="(CAGA)n"
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complement(3821. .4
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complement(3684. .3)
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/db_xref="GI:4309681"
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                                                                                                                                  /note-"TBLASTX identity to AA839912 vw66a07.r1 Stratagene mouse heart (#937316) Mus musculus cDNA clone IMAGE:1259892 5', mRNA sequence [Mus musculus]; (69. .187. Score: 1.8e-39; 98% identity.
                                                                                                                                                                                                                                             /rpt_family="AluSg"
complement(6580, .66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
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/rpt_family-"LINE2"
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                                                                                                                                                                                                                                                . 6699)
                                                         alignment_block:
                                                                                                                                                                                            alignment_scores:
                               US-09-750-590-2 x AC006930
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                                           Quality:
                        Ratio:
                                                                                                                                                                                          /rpt_family="LINE2"
complement(13865..14166)
/rpt_family="AluSq"
complement(14172..14469)
/rpt_family="Natusq"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_family="AluSp"
complement(9769..987
/rpt_family="LINE2"
10517..10665
/rpt_family="(TGGA)n"
10679..10862
11.00
1.000
100.000
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/note="TBLASTX identity to AAB39912 vw66a07.rl Stratagene mouse heart (#937316) Mus musculus cDNA clone IMAGE:1259892 5', mRNA sequence [Mus musculus]; (3. .65); Score: 1.8e-39; 100% identity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Translation="QVLLKVNGAGGLEDSFKNHVLSTYFVLGTLESKGGTIYALSQDW

GKSDERLLQAVENNDAPRSGATPLIIAQMCHTDLCRLLLQGGAARNODLQGRTALM

LACEGASPETYEVLLQGGAQPGITDALQGDAAHYGALAGDKLIILHLLQEAAGRPSPPS

ALTEDDSGEASSQDDRDAYEEIVRLRQERGRLLQKIRGLEQHKERRQQERQLSLHCCS

QVQELQQLLVERQEEKSSLGREVESLQSRLSLLE"

COMplement(9156...9201)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   join (-9114. 9235,25665. .25730,33291. .33397,33571. .33758 34554. .34591,36055. .36162,38360. .>38488)
/note-"Hypothetical human protein; This record extends the hypothetical protein encoded by f20887_1 (91|3510240) an additional 62 residues towards the amino terminus. However, the amino terminus of this protein has not been identified definitively within this genomic accession, and will likely require the isolation of cDNA. Displays weak similarity to ankyrin mottif-containing proteins"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpc_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /rpt_family="LINE2" 9423. .9718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="(CA)
complement(8786.
                                                                                                                                                                                                                                                                                                                                                                            frame: 2, quality: good, complement(12623, 12918)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="(TGGA)n"
complement(11967...12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental protein"/product="R33243_2, partial protein"/protein_id="AAD15479.1"/db_xref="GI:4309682"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="AluSx"
loin(<9114
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="(TGGA)n"
10875. .10993
                                                                                                                             /rpt_family="AluSx"
complement/11000
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complement/1%fo"
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                                                                                                                                                                                                                                                                                                                 /rpt_family="AluSx"
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12921. .13222
                                                                                                                                                                                                                                                                                                                                                                                                                          /note-"
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), 12046)
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                                                                                                                                                                                                                                                                                                                                                                                                  predicted exon, program: grail2exons_human_1.3,
2, quality: good, score: 54.000*
    Percent Identity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "(TGGA)n"
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                                           Length:
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TITLE
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Sequencing vector: plasmid; 0%
Sequencing vector: plasmid; 0%
Chemistry: Dye-primer ET; 95% of reads
Chemistry: Dye-terminator Big Dye; 0% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 170867 bases at least Q40
Consensus quality: 174124 bases at least Q30
Consensus quality: 176036 bases at least Q20
Insert size: 188000; agarose-fp
Insert size: 179350; sum-of-contigs
Quality coverage: 4.80 in Q20 bases; sum-of-contigs
Quality coverage: 4.80 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
Submitted (28-MAR-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St.
MO 63108, USA
On Aug 17, 2000 this sequence version replaced gi:8570236.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HOMO Sapiens chromosome 19 clone RP11-486P13, WORKING DRAFT SEQUENCE, 18 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center project name: H_NH0486p13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 179607)
Waterston, R. H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center: Washington University Genome Sequencing Center
Center code: WUGSC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The sequence of Homo sapiens clone
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                                                                                                                                                                                                                                                               NOTE: This is a 'working draft' sequence. It currently consists of 18 contigs. The true order of the pleces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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8208
11181
11281
14040
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1439
3331
3431
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   1338: contig of 1338 bp in length
1438: gap of unknown length
330: contig of 1892 bp in length
3430: gap of unknown length
5429: contig of 1999 bp in length
5529: gap of unknown length
8107: contig of 2578 bp in length
8107: gap of unknown length
11180: contig of 2973 bp in length
11280: gap of unknown length
11280: gap of unknown length
14039: contig of 2759 bp in length
14039: gap of unknown length
14139: gap of unknown length
14139: gap of unknown length
17330: gap of unknown length
                                                                11280
14039
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                                    alignment_scores:
Quality:
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ORIGIN
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Quality: 11.00
Ratio: 1.000
Percent Similarity: 100.000
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119646. 147254
                                                                                                                                                                  /note="assembly_name:Contig24"
147355, .179607
                                                                                                                          /note="assembly_name:Contig25"
48085 c 48884 g 39812 t
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                                                                                                                                                                                                                                                    /note="assembly_name:Contig22"
                                                                                                                                                                                                                                                                                                               /note="assembly_name:Contig20" 58100. .74742
                                                                                                                                                                                                                                                                                                                                                    /note="assembly_name:Contig19"
46779. 57999
                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_name:Contig17"
31554. .36515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vector_side:left"
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/note="assembly_name:Contigl5
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                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contig18"
36616. .46678
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/db_xref="taxon:9606"
/chromosome="19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig16"
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Percent Identity: 100,000
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Consensus quality: 190968 bases at least Q40
Consensus quality: 195665 bases at least Q20
Consensus quality: 195665 bases at least Q20
Consensus quality: 196434 bases at least Q20
Estimated insert size: 197900; agarose-fp estimation
Estimated insert size: 197369; sum-of-contigs estimation
Quality coverage: 10.63 in Q20 bases; agarose-fp estimation
Quality coverage: 9.64 in Q20 bases; sum-of-contigs estimation.
**NOTE: This is a 'working draft' sequence. It currently
**consists of 11 contigs: Gaps between the contigs
** are represented as runs of N. The order of the pieces
** is believed to be correct as given, however the sizes
** of the gaps between them are based on estimates that have
** This sequence will be replaced
** This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AsnalaLeuHisLeuAlaAlaLysTyrGlyHis 100
                                                                          * by the finished sequence as soon as it is available and

* the accession number will be preserved.

1 14306: contig of 14306 bp in length

* 14307 14406: gap of unknown length

* 49786 49885: gap of unknown length

* 49886 72977: contig of 23092 bp in length

* 73078 73077: gap of unknown length

* 73078 78598: contig of 5521 bp in length

* 78599 78658: gap of unknown length

* 78599 104248: contig of 5550 bp in length

* 104249 104348: gap of unknown length

* 104249 104348: gap of unknown length

* 104249 104348: contig of 25550 bp in length

* 104249 104348: gap of unknown length
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DOE Joint Genome Institute.
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Center clone name: RPCI-23_100M13
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Submitted (29-JUN-2000) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, US
On Jul 18, 2000 this sequence version replaced gi:8810292.
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                                                           unknown length
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VERSION
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REFERENCE
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AUTHORS
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LOCUS AC073691 2
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Ratio: 1.000
Percent Similarity: 100.000
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TITLE
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           Consensus quality: 208474 bases at least Q40 Consensus quality: 219397 bases at least Q30 Consensus quality: 221920 bases at least Q20 Consensus quality: 221920 bases at least Q20 Estimated insert size: 179000; agarose-fp estimation Quality coverage: 9.04 in Q20 bases; agarose-fp estimation Quality coverage: 9.04 in Q20 bases; sum-of-contigs estimation Quality coverage: 7.09 in Q20 bases; sum-of-contigs estimation.

* NOTE: This is a 'working draft' sequence. It currently consists of 32 contigs. The true order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 231443)
DOE Joint Genome Institute.
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (29-JUN-2000) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
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Center: Joint Genome Institute
Center Code: JGI
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DOE Joint Genome Institute.
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Center clone name: RPCI-23_144G23
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/db_xref="taxon:10090"
/clone="RP23-100M13"
/clone_lib="RPCI mouse BAC library 23"
/ 45613 c 47297 g 53094 t 1000 others
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and their order in this sequence record is
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ENCE, 32
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arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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56067
66067
78096
78096
78196
93146
93146
93146
1084339
1084335
128435
128835
145881
145881
173501
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/db_xref="taxon:10090"
/clone="RP23-144G23"
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1. .231443
                                                                    173600: gap of u
231443: contig o
mation/Qualifiers
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25715: Contig

25715: Gap of (

25815: gap of (

25815: gap of (

27924: Contig

28024: gap of (

31025: contig

28024: gap of (

31026: Contig

4206: gap of (

4206: gap of (

47079: Contig

47079: gap of (

56114: gap of (

56214: gap of (

5616: Contig

66166: contig

66166: Contig

66166: Contig

66166: Gap of (

78195: gap of (

78195: gap of (

78195: gap of (

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1145: gap of unknown 1
2377: contig of 1232 b
2477: gap of unknown 1
3674: contig of 1197 b
3774: gap of unknown 1
4946: contig of 1172 b
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of 27520 bp
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of 19996 bp in
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of 15193 bp in
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of 2109
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TITLE
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US-09-750-590-2 x AC073691/rev
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Quality:
Ratio:
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Consensus quality: 263895 bases at least Q30
Consensus quality: 263895 bases at least Q20
Estimated insert size: 215000; agarose-fp estimation
Estimated insert size: 275152; sum-of-contigs estimation
Quality coverage: 9.55 in Q20 bases; agarose-fp estimation
Quality coverage: 7.47 in Q20 bases; sum-of-contigs estimation
4 NOTE: This is a 'working draft' sequence. It currently
4 consists of 36 contigs. The true order of the pieces
4 is not known and their order in this sequence record is
5 arbitrary. Gaps between the contigs are represented as
6 runs of N, but the exact sizes of the gaps are unknown
7 This record will be updated with the finished sequence
6 as soon as it is available and the accession number will
7 be preserved.
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Center Project Name: 1758681
Center clone name: RPCI-23_56M17
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Center: Joint Genome Institute
Center Code: JGI
Web site: http://www.jgi.doe.gov
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DOE Joint Genome Institute.
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Mammalla; Eutheria; Rodentia;
1 (bases 1 to 278652)
DOE Joint Genome Institute.
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HTG; HTGS_PHASE1; HTGS_DRAFT
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1044: contig of 1044 bp in length
1144: gap of unknown length
2389: contig of 1245 bp in length
2489: gap of unknown length
3623: contig of 1134 bp in length
3723: gap of unknown length
4950: contig of 1227 bp in length
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e RP23-56M17, WORKING DRAFT SEQUENCE, 36 unordered
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331: gap of unknown length
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1989: contig of 21125 bp in length
19189: gap of unknown length
137271: contig of 18082 bp in length
137371: gap of unknown length
137371: gap of unknown length
154642: contig of 17271 bp in length
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2 200830: contig of 23709 bp in length
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/organism="Mus musculus"

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                                                                                                                                                                                                                                                                                                                                                         Wilson, R., Ainscough, R., Anderson, K., Baynes, C., Berks, M., Bonfield, J., Burton, J., Connell, M., Copsey, T., Copper, J., Coulson, A., Craxton, M., Dear, S., Du, Z., Durbin, R., Favello, A., Fulton, L., Gardner, A., Green, P., Hawkins, T., Hillier, L., Jier, M., Johnston, L., Jones, M., Kershaw, J., Kirsten, J., Laister, N., Latreille, P., Lightning, J., Lldyd, C., McMuuray, A., Mortimore, B., Callaghan, M., Parsons, J., Percy, C., Rifken, L., Roopra, A., Saunders, D., Shownkeen, R., Smaldon, N., Smith, A., Sonnhammer, E., Staden, R., Sulston, J., Thierry, Mieg, J., Thomas, K., Vaudin, M., Vaughan, K., Waterston, R., Watson, A., Weinstock, L., Wilkinson-Sproat, J. and Wohldman, P.
                                                                                                                      Direct Submission Submitted (31-JUL-Submitted by:
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Department of Genetics, Washington
St. Louis, MO 63110, USA, and
Sanger Centre, Hinxton Hall
Cambridge CB10 IRQ, England
e-mail: rw@nematode.wustl.edu and
                                                                                                 Genome Sequencing Center
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NOTICE: This sequence may not be the entire insert of this clone. It may be shorter because we only sequence overlapping sections once, or longer because we provide a small overlap between neighboring submissions.

This sequence was finished as follows unless otherwise noted: all regions were double stranded or sequenced with an alternate chemistry; an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one subclone

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FEATURES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The 5' cosmid is F54A3;3' cosmid is 80281, 200 bp overlap. Actual start of this cosmid is at base position 1 of CELK09F6; actual end is at 200 of CELB0281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOTES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          program
                                                                                                                                                                                                                                                                                                                                                                /translation="MAPHRVDROTTDDPLGFSINLMQKISRIVNSIYLATELTAGTAK
IYDLIAEFFNFGFDSFNQLQSIDMKQLKSGLESIVSINSELTYTDIDKRAEQRFRHLI
EIRKEVEGVGSLEDIKDAQANYKSELEAFKKATFDTSGIEEVLSAVKNINGAAANIEK
YSHIKELDGGDRGRAQGDIPDLKKFISTLKKSSFKEAFLSPVYGKVDSILTSKQVSK
CITIPLLKIKNMEEVEKLLQTIDSLKKTVDTLVRTNELVNWVKANDAVLEEVEALCSF
TEEEDNNPKSSVFNHMTFFECLLNVADYDLIPLAIATLNKVRKMDVQPIRDGIDVVN
DLFNVSSQLAELKTKLGELKDPNFSIAETPLSNPSLHTTAIGLSFKTGIGRKDEIAHG
SDFDMVIENAEMVDQEMKKTGKKAINMVEFGARLKKLKTELEIMKSNITVGGPHRIRR
STTSLADYAHIFQNALKVGGVDDLKKLMDAVEDLENSTDDATTVKLKEVKASLGSL
DSIGLQLSSFATPFIAIGQSFTELDAFFVSNRKIITTTAPIVSSGDASQGGQKASGGS
MTVQPYQNVSGTTTAEPMHESTNLIMFIGIGGGIVLVSALIFVVVCFYKSQKKKREMD
KEANDAMEKANKDKDEKKAKELAAQAA*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequences below are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="K09F6.3"
join(168. .316,3
1795. .2115)
                                                                                                        8079. .11369

/gene="K09F6.2"

Join(8079. .8082,8194. .8238,8285. .8780,8825. .9079,

9127. .9355,9401. .9506,10921. .11023,11114. .11369)

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/note="weak similarity to Borrelia afzelii outer surface
protein C (GB:D49379)"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKKTNKKAAQQASVKKDEKSKKKSKKDSKKGSKMDMKTAEEGMKSLQKKAA" complement (3213. .6451) /gene="K09F6.4" complement()oin(3213. .3417,3463. .4801,5280. .5831,6418. .6451))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGWIEKNAPELPREILNIFRVARNSKSLVVHCSNGIGRSAAFVSWELCYHFVPVNFEI
CDFSVAEFVYQKMIRSLDTTSTVNLDFLSLLTELRHSRPRAIHTPMQLAFSIMMVLDF
VMNNFPKGEWEAKYQEIRKSYLHARQMMHKDLEFDGSDGKTVDIALDEDGHGIPEKKG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MKEEGDKGATNNGKLPLKAMYOFCKSILRIANLAPNNAIVESEK
YSEQDRYSDVLCGMDRIILIDEDVCRRCYFKODYINANYLELEPKIRMRMIITQAPHSRT
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EKCSSYFPLEKDGKOKFHNVNVCTTNVOHPSADVVLRTLVITSYLGEKKKTHTVKHYSY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
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/strain="Bristol N2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genefinder(P.
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Green and L
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L. Hillier, ms
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gene

CDS

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APSNIDYFGEEMTKSNEREN INSIVRGKTRKKHIVLQAVOSKWOISKATERRESLSLM
SSCKESFIKKNIRNEREEGPASSCOGFADRVEKIPESIENLKNIPECDAFDRNEAVNY
IAGVVASNOLSHSLVADIFTICKLLRKFPSIQXYEVFNTIDLWIDHDKRLYSFCAVCO
STLUNSKLCTNSECORFSMCOKNYSESKTIVTFSIRSOMEDLLNSGALDKKLEISALS
QPSICSSISETPKYLHTKKESENKSEIMPVFLATNUVVSDASSNEMHRPONVMLASLM
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GVPAMNTYSGCSRCDVYGIRARTKNGSKYCKGSSEEGSKLYSSSYMSERLLSSPLPYP
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LFMDDTSMKHKTGREIQENYDGSLPFLLICVKRREKWTVLYLLHKLTBLITDKYLDE
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VYFLDTHVNMEPNEMSVPPRPEDEPPYEIDDDMMENGVDATTTPRITRRRAGONKIVK
KKLVLEPLTPRSTESYSULKRMKISERLERHPPASNLSAIDOLKEAVRGCSILMGKA
VYGGYENETLTDVELEEYCKVTLRPIILGSOHFKALKENLTEEDGRNMMDMGHFVMAKL
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// gene **K09F6 6*
// gene **K109F6 6*

IGTDEQRVLEVEASIASISATTGIQYDLKSITKEHLHRSYKTDAIDHVPGVDLTVLYN
NISLIKAPAKGQLSQFYTLVLATMFDPPYKVWKFTYRPNSSGKADKNFTDLPLAFMNQ
LFGLSWDICDYYLPKDLLVGSEDTIDETHPFLESLDCSEPIDEIMRRREGRENAKSVF
KSAFSRALKSYRAYHYDLVTNYLKYCEERNTCKDHLSWNQVRHFPKLSKKTKAECNSA
TPSQILDFYHRSPFFGNAQEPEDIKDSAEMANSSQ*
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ENLERVEKERREHIERHRQAEARAKALEKEKRELEEKQKKENLERVEKERREHIERHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QAEARAKALEKEK RELEEKOKKENLERATOKEREH I ERHREAQERHERLOALEAKOKE
DERAREEDKAKAREEAKSKKDTKAEKSKYT I DPKO I VNI PGKYYASQEAKKI I EKVNE
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KFKFNVTDVYALVNEFDLTDGLSNELEAAIIEHKMIQYPMISSQVRSCYIDGGRPDAP
ANTLFTSKMPRRLFLGLVSSEAYNGSFGTTPFNFKPYGVQDVHIDYCGQTIPGRPMNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
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AEGPWEFVLGNSSRSYLNLKRTYLVYTFNITDONGAIVNIPNPITKDSLVYAPINNIA
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/gene="K09F6.5"
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LTCANHDDPARRIVYNQCGLRSSGSCNFCLNQGTECKINDEYTTPLLAAAIQLDNDQV
DVTRLPSVVNMLFKHHIKVRFPHARGLYRTKHDGONPLKIVLPKRPIIDCTQFYKSSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEKQERDK I VSKVKESEA I EKEAVRASSEYHDVALK I FQKPSDRNI YDELKLSFER I L
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gene

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alignment_block:
US-09-750-590-2 x CELK09F6/rev
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AUTHORS
TITLE
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SOURCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (13-AUG-2000) Whitehead Institute/MIT Center for Research, 320 Charles Street, Cambridge, MA 02141, USA On Jan 15, 2001 this sequence version replaced gi:9799782.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 142694)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                      All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Birren, B., Linton, L., Nusbaum, C.
Homo sapiens chromosome 8, clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC078966.2 GI:12229305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Birren, B., Linton, L., Nusbaum, C., Lander, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE, 60 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 142694)
                                                                                                                                                                                                                     Contact: sequence_submissions@genome.wi.mit.edu
Sequencing vector: Plasmid; n/a; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.960731 Consensus quality: 118009 bases at least Q40 Consensus quality: 129480 bases at least Q30
                                                                                                                                                                Center project name: L10521
Center clone name: 166_H_15
                                                                                                                                                                                                                                                                                  Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                             Center: Whitehead Institute/ MIT Center code: WIBR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S., Barna, N., Bastien, V., Beda, F., Boguslavkiy, L.,
                                                                                                                                                                                                                                                                                                                                                                 ·---- Genome Center
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                                                                                                                                         Summary Statistics
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                                                                                                                                                                                                                                                                                                                                       Research
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arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8385 8484: gap of 100 bp 100 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Insert size: 145000; agarose-fp
Insert size: 136794; sum-of-contigs
Quality coverage: 2.9 in Q20 bases; agarose-fp
Quality coverage: 3.0 in Q20 bases; sum-of-contigs
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                                                          31792
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                                                                                                                                                                                                                                                                                                                                                                                                                         19998 20097: gap of 100 bp
20098 21414: contig of 1317 bp in length
21415 21514: gap of 100 bp
21515 23333: contig of 1719 bp in length
23234 23333: gap of 100 bp
23334 24759: contig of 1426 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15547: contig of 909 bp
15548 15647: gap of 100 bn
15648 17488: conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4680: contig of 624 bp in length
4681 4780: gap of 100 bp
4781 5729: contig of 949 bp in length
5730 5829: gap of 100 bp
5830 6454: contig of 672.
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1377 2083:
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3594 3956: cor
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2947 3493: co
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7911: 7ap
                                                31791: gap of 100 bp 32790: contig of 999 bp in length
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17488: contig of 1841 bp in length
17588: gap of 100 bp
18605: contig of 1017 bp in length
18705: gap of 100 bp
18705: gap of 109 bp in length
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7160: con
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25970: cont
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/y11: contig of 651 bp in

11: gap of 100 bp

8384: contic
                                                                                                                                                                               100 bp
30232: contig of 1134 bp in
                                                                                                                        31691
                                                                                                                                                                                                                                          67: gap of 100 bp
28998: contig of 1431 bp in
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contig of 1397 bp in
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contig of 1334 bp in length
                                                                                                              contig of 1359 bp in
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contig of 373 bp in length
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663 bp in length
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FEATURES
                misc_feature
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103821 109031
109032 109131:
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133781 142694: contig of 8914 bp in length
Location Qualifiers
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121988 122087:
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88443 91793: contig of 3351 k
91794 91893: gap of 100 bp
91894 96715: contig of 4822 k
96716 96815: gap of 100 bp
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38728 38827:
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                                                                     /organism-"Homo sapiens"
/db_xref-"taxon:9606"
/chromosome-"8"
                                                                                                               1. .142694
note-"assembly_fragment
                                          clone="RP11-166H15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100 bp

100 bp

100 bp

50405: gap of 100 bp

52476: contig of 2071 bp

52576: gap of 100 to

4638:
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35542: con
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77144: contig of 2300 bp
77244: gap of 00 bp
80896: contig of 3652 bp
90996: gap of 100 bp
84597: contig of 3601 bp
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59548: contig of 2436 bp in length
5958: gap of 100 bp
62677: contig of 3093 bp in length
6277: gap of 100 bp
65196: contig of 2419 bp in length
65296: gap of 100 bp
66831: contig of 3135 bp in length
68531: gap of 100 bp
71089: contig of 2558 bp in length
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8827: gap of 100 bp
8827: gap of 100 bp
39991: contig of 177.
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44939: contig of 2884 bp
4939: gap of 100 bp
46534: contig of 1595 bp
6634: gap of 100 bp
6634: gap of 100 bp
68377: contig of 1643 bp
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41855: contig of 1764
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37450: contig of
                            lib-"RPCI-11 Human Male
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contig of 6905
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contig of 7220 bp
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contig of 5211 bp
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US-09-750-590-2 x AC078966/rev
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LOCUS AC026950 1
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dodge, S., Domino, M., Doyle, M., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grant, G., Hagos, B., Heaford, A., Horton, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Karatas, A., Klein, J., Lieu, C., Liu, G., Locke, K., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Janders, T., Leboczky, J., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Meddrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J., Murphy, T., Naylor, J., Norman, C., Herre, N., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T., M., Oliver, J., Peterson, K., Pierre, N., O'Neil, D., Olivar, T., M., Oliver, J., Peterson, K., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Roy, A., Santos, R., Schauer, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigilio, J., Vondon, G., Zaimer, A., and Zodv, M., Wyman, D., Ye, W.J., Vondon, G., Zaimer, A., and Zodv, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (25-MAR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 25, 2000 this sequence version replaced gi:7547198. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Boguslavkly, L., Boukhgalter, B., Brown, A., Burkett, G., Boguslavkly, L., Castle, A., Choepel, Y., Colangelo, M., Collins Compopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Dlaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Dlaz, J.S.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vassiliev,H., Viel,R., Vo,A., Wilson,B., Wu
Young,G., Zainoun,J., Zimmer,A. and Zody,M.
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Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 8, clone RP11-555E9
Unpublished
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HTG; HTGS_PHASE1; HTGS_DRAFT.
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Sequencing vector: M13; M77815; 100% of reads Chemistry: Dye-terminator B1g Dye; 100% of reads Assembly program: Phrap; version 0.960731 consensus quality: 156073 bases at least Q40 Consensus quality: 161264 bases at least Q30
                                                                                                                                                                                                                                     Center project name: L8307 Center clone name: 555_E_9
                                                                                                                                                                                                                                                                                                          Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                         Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Whitehead Institute/ MIT Center for Genome Research
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Gaps: 0
Percent Identity: 100.000
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29170 44374: contig of 15205 bp in length
44375 44474: gap of 100 bp
44475 59546: contig of 15072 bp in length
59547 59646: gap of 100 bp
76691 76790: gap of 100 bp
76791 94256: contig of 17044 bp in length
94257 94356: gap of 100 bp
94357 115371: contig of 17466 bp in length
15372 115471: gap of 100 bp
15472 135567: contig of 21015 bp in length
15472 135567: contig of 21096 bp in length
1568 135667: gap of 100 bp
1568 135667: contig of 21096 bp in length
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1933 2032: gap of 100 bp
2033 5510: contig of 3478 bp in length
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033 5510: contig of 3478 bp in length
511 5610: gap of 100 bp
611 10360: contig of 4750 bp in length
361 10460: gap of 100 bp
461 17677: contig of 7217 bp in length
678 1777; gap of 100 bp
778 29069: contig of 11292 bp in length
070 29160: gap of 100 bp
                                                                                                                                                                                                                                                                                                           /note="assembly_fragment" 59647. .76690
                                /note="assembly_fragment"
136668, .165622
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115472. .136567
                                                                                                                                               clone_end:SP6
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76791. .94256
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/db_xref="taxon:9606"
/chromosome="8"
/note="assembly_fragment"
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/clone_lib="RPCI-11 Human
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US-09-750-590-2 x AC026950/rev
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LOCUS CNS07EF9 1
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Percent Similarity: 100.000
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 192972)

Hellig,R., Petit,J.L., Vico,V., Dasilva,C., Robert,C., Wincker,P., Brottler,P., Cattolico,L., Barbe,V., Pelletier,E., Artiguenave,F., Levy,M., Eckenberg,R., Bruls,T., deBarardinis,V., Cruaud,C., Gyapay,G., Saurin,W. and Weissenbach,J. Sequencing of the human chromosome 14

Unpublished
                                                                                                                                                                       Overall
                                                                                                                                                                                                            Assembly program: Phrap; version 2.0 Quality coverage: 6.58x in Q20 bases;
                                                                                                                                                                                                                                             The following BAC sequence is oriented from the T7 to the SP6 end. Upstream BAC (overlapping the T7 end): R-514D2 Downstream BAC (overlapping the SP6 end): C-2082C19 (AC*AL358338)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                 Web site: http://www.genoscope.cns.fr/
Contact: SeqRef@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genoscope.
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REFERENCE
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KEYWORDS
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TITLE
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                                                                                                                                                                                                      CE 2 (bases 1 to 20293)

CE 2 (bases 1 to 20293)

RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Rafter, B., Erown, A., Burkett, G., Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Anderson, S., Boukhgalter, B., Brown, A., Burkett, G., Collins, S., Campoplano, A., Costle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Domino, M., Doyle, M., Ferreira, P., Fitzhgh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Galagan, J., Garant, G., Hagos, B., Heaford, A., Horton, L., Karatas, A., Howland, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Howland, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., McCarthy, M., McEwan, P., McGurk, A., Macdonald, P., Marquis, N., McMardis, N., McMardis, N., McMardis, N., McMardis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., O'Nell, D., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Roy, A., Santos, R., Schauer, S., Severy, P., Spencer, B., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigillo, J., Vessillev, H., Viel, R., Vo. A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Voung, G., Zainoun, J., Zimmer, A. and Zody, M.
                          All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                Submitted (20-APR-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Jul 4, 2001 this sequence version replaced gi:7622413.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 8, clone RP11-678D18 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC060775 202993 bp DNA HTG
Homo sapiens chromosome 8 clone RP11-678D18
                                                                                                                                                                                            Direct Submission
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Location/Qualifiers
http://ftp.genome.washington.edu/RM/RepeatMasker.html
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Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
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WORKING DRAFT
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BASE COUNT
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                                                                                                seq_name: gb_in:CEY57G11C
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US-09-750-590-2 x AC060775
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NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be preserved.
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Sequencing vector: M13; M77815; 41% of reads
Sequencing vector: Plasmid; n/a; 59% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
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Insert size: 202793; sum-of-contigs
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84397 202993: contig of 118597 bp in length
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6271 6370: gap of 100 bp
6371 84226: contig of 77926 bp in length
64297 84396: gap of 100 bp
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Z99281.1 GI:2
HTG.
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Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida;
Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis
1 (bases 1 to 313573)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  It may be shorter because we only sequence overlapping sections once, or longer because we arrange for a small overlap between neighbouring submissions.

The true left end of clone F13G11 is at 101 in this sequence. The true left end of clone Y4IE3 is at 254309 in this sequence. The true left end of clone Y5ID11 is at 286315 in this sequence. The true right end of clone Y5TG11 is at 313573 in this sequence. The start of this sequence (1. .104) overlaps with the end of sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Current sequence finishing criteria for the C. elegans genome sequencing consortium are that all bases are either sequenced unambiguously on both strands, or on a single strand with both a dye primer and dye terminator reaction, from distinct subclones. Exceptions are indicated by an explicit note.

EXCEPTION TAILS SEQUENCE IS NOT THE ENTIRE INSERT OF CLONE Y57G11C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         jes@sanger.ac.uk or rw@nematode.wustl.edu
Coding sequences below are predicted from computer analysis, using
predictions from Genefinder (P. Green, U. Washington), and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (17-SEP-1997) Nematode Sequencing Project, Sanger Centre, Hinxton, Cambridge CB10 1RQ, England and Department of Genetics, Washington University, St. Louis, MO 63110, USA. E-mail:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome sequence of the nematode C. elegans: a platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          For a graphical representation of this sequence and its analysis see: http://wormbase.sanger.ac.uk/perl/ace/elegans/seq/sequence?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  available information
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                                                                                                                                                                                                                                                                                                                                                                                                                                          complement join 5756 . .6208,11798 . .11941,1249 /gene="Y57G11C.32" /note="CDNA EST yk549d8.3 comes from this gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(join(5756. .6208,11798. .11941,12492.
/gene="Y57G11C.32"
  cDNA EST yk618e9.5
                                                                                                                                                                  GVGTQNSARIGETQTAKNDDVANRKTVDLKAVRRMSQEDMKDILDRVVKY"
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/translatlon="mlrityehlfstalrenhnnlgktaerykkilgeddgehvilkn
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ertwowfrsychpkhryQTsldlktprpfisensgkslstaQsfenplfaeknfkipie
wmkllpleagsaryadnlltynkskedrnvdistpkQehfyktpsylsfnghksvter
                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA EST yk549d8.5 comes from this
                    join(19817. .19921,19977./gene="x57G11C.33"
/note="cDNA_EST_yk465c2.5
                                                                                                                                                                                                                                                                                                                               /protein_id="CAB54455.1"
/db_xref="GI:5824825"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="Y57G11C"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:6239"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'chromosome-"IV"
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                                                                                                           gene-"Y57G11C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              biology. The C. elegans 5396), 2012-2018 (1998)
                                                                                                                 .19921,19977.
:11C.33"
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from this gene"
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complement(join(56761..57675,59595.
/gene="Y57G11C.1"
complement(join(56761..57675,59595.
/gene="Y57G11C.1"
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LLNQYALNMTDNFLCNTATLDGAHERFIFVTLDTVARDTIKKRWPEIQOFHWPTPSLY
KPFSFAEGPYQTIYLLRSNLALALIKKKHETILIFLCEFFQKLHFHSRGKSFWMMQQD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="maqkpgTmaqmrngTsggDkrqyETEVIILnqcrklngqIfIqr
DyskgLDvqfEaEyparlTEKvprDvmEnTIVRINRIFaDaEAITPQTIFETVLGCFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /LIGHS lation="MRISCSKSVPFSDLININTGAAGEIVDKNDDEEENRLPLSEHLM
EIVKLOGKOWRWFVPAYTLLILDCALMIJEPALYGOMMTNAIOMSTODIIKRACLLLA
LIQFSEATCKSACYFFMOYAEKLTARNIRIOLFRSILPGEISFFDENKTGOLVSRITH
DSESISNTLPVHIETLVNNLFWFFGSIPIMFCYSWOLTLTSFIEFPITLLMTRYYGLA
VEKLSEKENDATAASNETVEEVLSAIRTVRSFAAENEOKRYTKNTEDWFKISTKTVT
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DGGSKLMQLGRYGFHEVNPDGTCNDQKVALAKGKMENGTVEVQMSKTLPSWGRLQFKA
YWYIVDYMLMTPIIGEYLKPYLAMIGFILMITI*
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49798. .499
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                                                                                                                                              /protein_id="CAB16504.1"
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/translation="mnfydekfylaiswcnleydg
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="contains similarity to Pfam domain: PF00005 (ABC transporter), Score=227.6, E-value=5.9e-65, N=1; PF0066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TFWRKNIFDMNYEDDMSYDAIFDQLGSEEEHSMRKEWVNGANFFIRANNDTQLFFERM
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/db_xref="GI:3881205"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(72323. .72434,73344. .73819,73988. .74092,75390. .7
76421. .76643,77283. .77454,77734. .77776,79019. .79491,
79820. .79990,81273. .81492,82078. .82300,82985. .83168)
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GINLSIESGKTVALVGPSGNGKSTLVSLIQQFYTPQSGRILTDGIPIQNINHQHYHSN
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/db_xref="GI:3881178"
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                                                                                                  GITTLLSSAVILQIVANAMPKTSELPLLGNFILAEIFVVAIGVLFAVLVLTLHQRAHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E-value=2.2e-40, N=4"
                                                 REWRPPAWMLWILRMTGSSKFLSRNITKIRHKSSTAERIHYTGEGAYLFKNLDESLQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Neurotransmitter-gated ion-channel), Score=139.7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Y57G11C.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Y57G11C.2"
VREYIQEEDRDYFRELTYYKFFDRLDFLLLFIFQVGNALVTLFLSFLAFLKRKKILQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="contains similarity to Pfam domain: PF00065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .46253,47048. .47127,48470.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .46253,47048. .47127,48470.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         this
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .60373,62462. .62669))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .60373,62462. .62669))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .48835,49496.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .48835,49496. .49652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PF00664
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gene

CDS

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seq_documentation_block:
                                                                                                                                                seq_name: gb_sts:HSJ71H3
                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                 US-09-750-590-2 x CEY57G11C
                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality: 10.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: CEY57G11C
                                                                                                                                                                                             HSJ71H3 398 I
STS from H.sapiens
AL159899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /ProteIn_id="Cab16508.1"
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PALDSNLLKVEKDYVNISRVEIPLGRNIYIGQVPVKDTEETFWKAVFDKRIVSIDVIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(join(121147. .121290,121344. .122107, 122948. .123254,123301. .123520,123611. .123624))
/gene="Y57GILC.6"
complement(join(121147. .121290,121344. .122107, 122948. .123254,123301. .123520,123611. .123624))
/gene="Y57GILC.6"
/note="contains similarity to Pfam domain: pF00102
(Protein-tyrosine phosphatase), Score="19.5, 123658. .121290, N-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="spfremb::018233"
/translation="mrygsvtiksfpgclkfvpsrtlavsyvptdsgclvqftvqrlp
RPEKHIEKNALMANLDDLAVIMKNPKLRFSDVISILSSFKSGYLEEIRIQSFKGYEGS
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GOFVYEEIKLRDARCETREVARVFDPKFSSHRKYCCFRRTHYAGQFTVSFEEHCISVI
FGYFSSYSSSEVSSDBNQIFTKICRNKTKNNYNKCFKRIOLNFGSEKSFLGHFLONF
LSLKTTNFNEITVKMEEKLKDELNSIKMFVFLNFOFFIKVVHIFSFRGLSLSRMPTV
VYHGVVNDLLEQREPIDRHSLLFCSFQIILNFNFRCFLSKVCRQMRDVIYSKDLGFKK
RKLRLDEFEISCNTFISSERIFTKNDESGCNAKCDGRQDELIKKDKLNSFLDDFAIVMKN
RKLRLDEFEISCNTFISSERIFTLETGVVDEMMKKNSIMEKOFKTKKVRLAEVKSDYVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(join(116817...117695,118020...118109,
118283...118389,118594...118768,118818...119067,
119176....119390))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DILSLEKPGVLEKIEINWKKWPASYFDDIDALFELDQWKQANVNWLASSTISNFSFKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(join(116817...117695,118020...118109,
118283...118389,118594...118768,118818...119067,
119176...119390))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYDSSIRPVINERDTLFINISINSMSFLTLDDAEETINFSGEFILGWKDEFLFWNKSD
YNITWLKLKESFLWTPDTTVSTSIDTNYLIETSERYVSVKYDGTVRQNIYAVFTNLCD
MNINEFPYDQOTCMIKMGPWSYTMKEVTCIVGGDIERNETTGSSGNFSIAFFHCMNFV
VKFLLQKFQGNSEWDFEGIVSSYGETEDPDVNFTESEVHFALTVKRRPQFYVMVLLIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="contains similarity to Pfam domain: PF01827 (Domain of unknown function), Score=215.4, E-value=2.8e-61, N=3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYIITVVCIFGLFTPTANHGLREERVNLGITTLLSSAVILQIVANAMPKTSELPLLGN
FILABIFVVAIGVLFAVLVLTLHORAHTREWRPPAMMLMILRMTGSSKFLSRNITKIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/protein_id="CAB16509.1"
/db_xref="GI:3881184"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LIFQVGNALVTLFLVKQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Y57G11C.7"
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                                                                 398 bp
                                 random shear fragment,
                                                                                                                                                                                                                                                                                                           from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent
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Gaps:
Identity:
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0
100.000
                               sequence tagged site
                                                              07-MAR-2000
                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_sts:G39779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-750-590-2 x HSJ71H3/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality: 9.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to reverse of: HSJ71H3
                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342 LysGluLysGlnHisGluGluSerLeu 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      188 AAAGAGAAGCAGCATGAGGAATCCTTG 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Z10315 Zebrafish AB Danio rerio STS genomic, G39779.1 GI:3358988
                                                                                                                                                                                                                                                                                                                                                                                        Danio rerio

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;

Cypriniformes; Cyprinidae; Rasborinae; Danio.

1 (bases 1 to 653)

1 (bases 1 to 653)

1 (bases 1 to 653)
                                                                                                                                       Cardiovascular Research Center
Cardiovascular Research Center
Massachusetts General Hospital
Mail code 1494100A, 149 13th Street, Charlestown,
Email: fishman@mgh.cvrc.harvard.edu
http://zebrafish.mgh.harvard.edu
Primer A: TGTGCACTAACACACGCAGA
Primer B: TGATCAACTCTCACTTGAGTTTG
STS size: 251
                                                                                                                                                                                                                                                                                                           Shimoda, N., Knapik, E.W., Ziniti, J., Sim, C., Yamada, E., Kaplan, S. Jackson, D., de Sauvage, F., Jacob, H. and Fishman, M.C. Zebrafish genetic map with 2000 microsatellite markers Genomics 58 (3), 219-232 (1999)
                                                                                                                                  Fax: 6177265806
                                                                                                                                                                                                                                          Contact: Mark C. Fishman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hunt,S., Sims,S., Willey,D., Carter,N. and Ross,M. Direct Submission
Direct Submission
Submitted (07-MAR-2000) E-mail contact: humquery@sanger.ac.uk
Marker stSG71065 (Primer A : ATGCTGCAAAATGGCC; Primer B :
GAAACCCACAGAGTCTTTCCC; amplimer size : 132 bp) was developed from a single pass sequencing read from H.sapiens flow-sorted chromosome 9-12 random shear fragment, SC9-12pJ71h3. Vector : pUC18 Site :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       zebrafish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Further information : http://www.sanger.ac.uk/HGP/Chr10/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL159899.1 GI:7210841 STS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 398)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="SC9-12pJ71h3"
/tissue_type="Lymphoblastoid cell line"
/clone_lib="SC9-12pJ"
/59 c 89 g 135 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /chromosome="10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length: 9
Gaps: 0
Percent Identity: 100.000
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sequence tagged site

01-FEB-2001

MA 02129, USA

CDS

gene

DEFINITION

PCR Profile:

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primer_bind
primer_bind
BASE COUNT 1:
ORIGIN
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                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-750-590-2 x G39779/rev
                                                                                                                     seq_documentation_block:
LOCUS AF048832
                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                     DEFINITION
                                                                                                                                                                   seq_name: gb_ro:AF048832
                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                    Quality: 9.00
Ratio: 1.000
Percent Similarity: 100.000
                                                   VERSION
                                                                 ACCESSION
                                                                                                                                                                                                                                                                        Align seg 1/1 to reverse of: G39779
 ORGANISM
                                                                                                                                                                                                    Protocol
                                                                 Microtus ochrogaster cytosolic NADP-dependent isocitrate dehydrogenase (IDP2) gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Primers are available from Research Genetics (http://www.resgen.com phone: 800-533-4363).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Buffer:
prairie vole.
Microtus ochrogaster
                                                   AF048832.1 GI:4105616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Primer: each 375 nM dNTPs: each 200 uM Tag Polymerase: 0.034 units/ul Total Vol: 10 ul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Thermal Cycler:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCR Cycles:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Denaturation: Annealing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Template:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /lab_host="DH5alphar'IQ"
/lab_host="DH5alphar'IQ"
/note="Vector: ml3Mp19 with added BstXI site; V-type:
/note="Vector: ml3Mp19 with added Labrafish of AB
Phage; Genomic DNA from a single adult Zebrafish of AB
strain was digested with AluI, Cac8I, HaeIII, NlaVI, or
RsaI, Fragments in the range of 250-500 bp were gel
purified and a BstX1 linker was added. The fragments were
cloned into a modified Ml3mp19 vector and transformed
into E. Coll DH5alpha. Microsatelllite sequences were
screened with labeled d(CA)15 and d(GT)15 oligonucleotide
probes."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(299...
167 c 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Danio rerio"
/strain="AB"
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Arvicolinae;
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Arvicolinae;
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MRSRGLAHRARLDNNTELSFFAKALEEVCIETIEAGFMTKDLAACIKGLPNVQRSDYL
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/EC_number="1.1.1.42"
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|0. .1254
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                                              Cytosolic isocitrate dehydrogenase in humans, mice,
                                                                       Baker, R.J.
                                                                                   Nekrutenko, A., Hillis, D.M., Patton, J.C., Bradley, R.D. and
                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus Moses 1 to 1456)
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Cytosolic isocitrate dehydrogenase in humans, mice, and voles and phylogenetic analysis of the enzyme family Mol. Biol. Evol. 15 (12), 1674-1684 (1998)
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AWSRGLAHRARLDNNTELSFFAKALEEVGIETIEAGFWTKDLAACIKGLPNVQRSDYL
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                                                                                                                                                                                                                                                                                1 (bases 1 to 1719)
Jennings,G.T., Sechi,S., Stevenson,P.M., Tuckey,R.C., Parmelee,D. and McAllster-Henn,L.
Cytosolic NADP(+)-dependent isocitrate dehydrogenase. Isolation o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytosolic NADP-dependent isocitrate dehydrogenase. Rattus norvegicus (strain Sprague-Dawley) (library: liver cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus
                                                                                                                                                                                                                                                      rat cDNA and study
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             L35317.1 GI:537940
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2 (bases
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nekrutenko, A., Patton, J.C., Bladley, R.D. and Baker, R.J Direct Submission
                                                                                                                                                                            Biol. Chem. 269 (37),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 1456)
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                                                                          Location/Qualifiers
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/product="NADP-dependent isocitrate dehydrogenase"
/product="AADD2919.1"
/product
/organism="Rattus norvegicus"
/strain="Sprague-Dawley"
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NTFEFMDKLGENLKAKLAQAKL"
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/EC_number="1.1.1.42"
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/db_xref="taxon:10090"
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Gaps: 0
Percent Identity: 100.000
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BASE COUNT
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                    alignment_scores:
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US-09-750-590-2 x RATCNDI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_htg:AC014339
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Ratio: 1.000
Percent Similarity: 100.000
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mRNA
CDS
                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (16-NOV-1999) Celera Genomics, 45 West Gude Drive, Rockville, MD, USA
This sequence was identified as CDM:10211476 by the submitter.
For further information on this sequence e-mail to fly@celera.com.
* NOTE: This is a 'working draft' sequence.
                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 2480)
      Quality:
                                                                                                                                                                                                                                                                                                                                                         Direct Submission
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pieces
                                                                                                                                                                                                                                 This sequence will be replaced
                                                                                                   748
                                                                                                                                                                                      the finished sequence as soon as it is available and e accession number will be preserved.
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GIENRDATNOQVTKDAAEAIKKYNVGVKCATITPDEKRVEEFKLKQMWKSPNGTIRNI
LGGTVEREAIICKNIPELVTGWVKPIIIGRHAYGDQYBATDEYVDGPGKVEITYTPKD
GSQKVTYLVHDEEGGGVAMGMYNQDKSIEDFAHSSFQMALSKGWPLYLSTKNTILKK
YDGRFKDIFQEIYDKQYKSKEEAQKINQDKSIEDFAHSSFQMAKSEGGFTWACKNYDGDDV
OSDSVAQGYGSLGMMTSVLICPDGKTVEAEAAHGTVTRHYRMYQKGQETSTNPIASIF
AWSRGLAHRAKLDNNTELSFFANALEEVCIETIEAGFMTKDLAACIKGLPNVQRSDYL
                                                                                                 /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                          Location/Qualifiers
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/tissue_type="liver"
/tissue_lib="lambda gtll"
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, *** SEQUENCING IN PROGRESS ***,
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SOURCE
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US-09-750-590-2 x AC014339/rev
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Map location: 2p21.

Muthors state, with three exceptions, this sequence corresponds to that reported by Hu et al. (1992), Genbank Accession No. M96803.

Location/Qualifiers
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1 (bases 1 to 3756)

Chang,J.G., Scarpa,A., Eddy,R.L., Byers,M.G., Harris,A.S., Morrow,J.S., Watkins,P., Shows,T.B. and Forget,B.G.
Cloning of a portion of the chromosomal gene and cDNA for human beta-fodrin, the nonerythroid form of beta-spectrin Genomics 17 (2), 287-293 (1993)

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                   DLPAVEAATKKHEAIETDIAAYEERVQAVAVARELEAENYHDIKTTARKOVIKU
EYLLELLRARRORLENNIGLOKIFOEMLY INDIMEDENKYLLSODYGKHILGVEDLO
KHTLYEADIGIOAERVRGVNASAQKFATDGEGY KPCDPOVIRDRVAHMEPCYOELCOL
AAERRARLEESRLIMKFFWEMA.EEEGWIREKEKILSSDDYGKDLTSVMRLLSKHRAFE
DEMSGRSGHFEQAIKEGEDMLAEEHFGSEKIRRRIITIREOWANILEQLSAIRKRRLEE
ASLLHOFQADADDIDAMMLDILKIVSSDVGHDEYSTOSIVKKHXDVAEEIANYRPTL
DTLHBOASALPQEHAESPDVRGRLSGITERYKEVAELTRILRQALQDTLALYKMFSEA
DACELWIDEKEQWLNINGIPEKLEDLEVIGHRESLEPENNQDASRVAVVNGIARQLM
HSGHPSEKEIKAQODKLNTRWSGFRELVDFTKKDALLSALSIQNYHLECNETKSWIREK
TKVIESTQDLGNDLAGVMALQRKLTGWERDLVAIEAKLSDLGRERKLESEHPDQAQA
ILSRLAEISDVWEENKTTLKNREASIGEASKLOOFLROLDGFOSMLSRTOTAIASEDM
PNTLTEAEKLITGHENIKNEIDNYEEDYGKNRDMGENVTOGGTDAQYMFLRGRLAGAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/product="beta-fodrin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="This sequence comes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="SPTBN1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note="beta-fodrin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="SPTBN1"
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Percent Identity:
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KEYWORDS
SOURCE
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ACCESSION
VERSION
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US-09-750-590-2 x S65762
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ORIGIN
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LOCUS AF225960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_ro:AF225960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
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Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: S65762 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
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-Submitted (17-JAN-2000) Neurology, in Wolfe St., Baltimore, MD 21287, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21133160
2 (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 7240)
1 (bases 1 to 7240)
1 Jackson, M., Song, W., Liu, M.Y., Jin, L., Dykes-Hoberg, M., Lin, C.I.,
Bowers, W.J., Federoff, H.J., Sternweis, P.C. and Rothstein, J.D.
Modulation of the neuronal glutamate transporter EAAT4 by two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus spectrin-like protein GTRAP41 mRNA, complete cds. AF225960
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Rothstein, J.D. and Jackson, M.
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Nature 410 (6824), 89-93 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Norway rat.
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                                                                 YHYFSKMKALAVEGKRIGKVLDHAMEAEHLVEKYESLASELLQWIEQTIGTFNDRQLA
NSLSGYQNQLQSFNSYETVEKPKFTEKGNLEVLLTTIQSKLRANKOKVYTPREGRLI
SDINKAMERLEKAEHERELALRTEIR ROEKLEGLAARFDRKAAMRETWLSENQRLVSQ
DNFGLELAVEAAVRHERIET IN DELIQEKUDAVAAELAAEHYHDIKRIARQNU
VARLWDFLREMVAARRERLLLNLELQKVFQDLLYLMDWAAEMKGRLQSQDLGKHLAGV
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ORLAQAASLYQFOADANDMEAWLVDALRLVSSPEVGHDEFSTQALARQHRALEEEIRA
HRPTLDALREGAAALFPALSHTPEVGGRVFTLEQHYEELQAARGERRAALAEFYT
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1933 c 1096 g 652 t
                                                                                                                                                                                                                                                                                                                                      /translation="MSSTLSPTDFDSLEIQQQYSDINNRWDLPDSDWDNDSSSARLFE RSRIKALADBEREAVQKKTFTKWYNSHLARVTCRVGDLYSDLRDGTLLRLLEVLEGET LPKPTKGTWRILALLEVLEGET LPKPTKGTWRILALLEVLEGET LPKPTKGTWRILALLEVLEGET LIKFTKGTWRILALLEVLET LIKFT QIQDISYETEDNKEKKSAKDALLLWCOWKTAGYPNVHVHNFTTSWRDGLAFNAIYHKH RPDLLDFESLKKCNAHYNLQNAFNLAEKELGITKLLDPEDVNVDQPDEKSITTYVATY
AEQLLKASPPGKDRIIGTQEQLNQRWQQFRSLAGGKKAALTSALSIQNYHLECTETQA
WMREKTKVIESTQDLGNDLAGVLALQRKLAGTERDLEAISARVGELTQEANALAAGHP
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/db_xref="taxon:10116"
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Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 to:
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Gaps:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Johns Hopkins University, 600 N.
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KEYWORDS
SOURCE
ORGANISM
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ORIGIN
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US-09-750-590-2 x AF225960
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LOCUS MUSSPNA
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Percent Similarity: 100.000
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M74773 S59200
M74773.1 GI:598330
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                                                                                                                                                                                                                                                                                    Erratum:[[published errata appear in Brain Res Mol Brain Res 1993 Oct;20(1-2):179 and 1994 Jan;21(1-2):181 and 1995 May;30(1):176]] On Dec 7, 1994 this sequence version replaced gi:409225.
                                                                                                                                                                                                                                                                                                                                                                                                 The complete amino acid sequence for brain beta spectrin (beta fodrin): relationship to globin sequences Brain Res. Mol. Brain Res. 18 (1-2), 87-99 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; 1 (bases 1 to 7524)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fodrin; globin; spectrin.
Mus musculus (strain BALB/c, sub_species domesticus) cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                93240985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Goodman, S.R.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ., Zimmer, W.E., Riederer, B.M., Bloom, M.L., Barker, J.E. and
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RDVEDEILWTERLPMASSLEHGKDLPSVOLLMKKNOTLOKEIGGHEPRIADLKEEROR
TLRTAAAGPELAELQEMWKRLSHELELIGKRILEALRAQOFYRDAAEAEAMMGEOELH
MMGGERAKDELSAQAEVKKHOVLEQALADYAQTIKQLAASSQDMLDHEHPESTRLTIR
QAQVDKLYAGLKELSAQAEVKKHOVLEQALADYAQTIKQLAASSQDMLDHEHPESTRLTIR
QAQVDKLYAGLKELSAGERRERLGEHLRALCOLRRELDDLEOMIOEREVVAASHELGODY
EHVTMLRDKFREFSRDTSTIGGERVDSAMLANGLIAGGHAAMATVAEWKDSLNEAMA
DLLELLDTTDKFREFSRDTSTIGGERVDSAMLANGLIAGGHAAMATVAEWKDSLNEAMA
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QLLLDTTDKFREFSRDVOQODGCLRLQKAYAGERERERDVSSADLVIKNOGGIKAEIEA
RADRRSACIDMGQELLARNHYAAEEISKLSGLOGSRROVSADANEERFSALEK
LTALEERENEOKRKREEEERRKOPTSRESGTLVDGGRVLDTAMDGTQSKLPP
STQAPSINGVCTDTESSGPLLEGORLEGSNVPEGFSGTGDESSGFREROTLPRGFA
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PSPMHOGSRSSESAHVATLPAARGELSAGEMEGTLCRKQEMERFNKKAANRSWONVYC
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367. .7458
/gene="Spnb-2"
367. .7458
                                                             /map="3
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LEALGTGWEELGRMWESROGRLAQAHGFQGFLRDARQAEGVLSSOEYVLSHTEMPGTL
QAADAAIKKLEDFMSTMDANGERIRGLLEAGRQLVSKGNIHAEKIQEKADSIEKRHRK
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1.000
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AFMAELAANKDWLDKVDKEGRELTLEKPELKVLVSEKLEDLHRRWDELETTTQAKARS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:598330
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                                                                                                                                          /strain="BALB/c"
/sub_species="domesticus"
                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                  /db_xref="taxon:10090"
                                                                                                                                                                                                     ∕organism="Mus musculus"
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Percent Identity:
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100.000
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FEATURES COMMENT

CDS gene JOURNAL MEDLINE REMARK

REFERENCE

TITLE AUTHORS VERSION ACCESSION

/product="brain beta spectrin"
/protein\_id="AAC42040.1"
/db\_xref="GI:409226"

/gene="Spnb-2"

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DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                        seq_documentation_block:
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ORIGIN
                                              SOURCE
                                                                               KEYWORDS
                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: MUSSPNA from: 1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-750-590-2 x MUSSPNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio: 1,000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 beta-spectrin; membrane skeleton protein.
Homo sapiens (tissue library: lambda gtll and lambda ZAPII) 2-year
                                                                                                                M96803.1 GI:338442
                                                                                                                                                                                                                                                   HUMSPTBNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEDEMSGREGHE OF MEGRALIC TREATER AND TRANSPORT OF RULES TRANSPORT OF THE CONTROL 
                                                                                                                                                                                           general beta-spectrin (SPTBN1) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDKHDTSASTQSTPASSRAQTLPTSVVTITSESSPGKRAEDKEKDKEKRSTVFGKKK*
1777 c 2055 g 1509 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EAWADLLELIDTRTQILAASYELHKFYHDAKEIFGRIODKHKKLPEELGRDONTVETL
QRMHTTFEHDIQALGTOVROLQEDAARLQAAYAGDKADDIQKRENEVLEAWKSLLGAC
EGRRVRLVDTGDKFRFFSMVRDLMLWHEDVIRQIEAOEKPRDVSSVELLMNNHQGIKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AEQGSPRMAGTMETSEMVNGAAEQRTSSKESSPVPSPTSDRKAKSALPAQSAATLPAR
TLETPAAQMEGFLNRKHEWEAHNKKASSRSWHNVYCVINNQEMGFYKDAKSAASGIPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EIDARNDSFTACIELGKSLLARKHYASEEIKEKLLQLTEKRKEMIDKWEDRWEWLRLI
LEVHQFSRDASVAEAWLLGQEPYLSSREIGOSVDEVEKLIKRHEAFEKSAATWDERFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QELYMMSEKRPRMKQSAVSMLKKHQILEQAVEDYAETVHQLSKTSRALVADSHPESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSEVPVSLKEAICEVALDYKKKKHVFKLRLSDGNEYLFQAKDDEEMNTWIQAISSAIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GQDYEHVTMLQERFREFARDTGNIGQERVDTVNNMADELINSGHSDAATIAEWKDGLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALERLTTLELLEVRRQQEEEERKRRPPSPDPNTKVSEEAESQQWDTSKGDQVSQNGLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ISMRQSKYDKLYAGLKDLAEERRGKLDERHRLFQLNREVDDLEQWIAEREVVAGSHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QLAAERRARLEESRRLWKFFWEMAEEEGWIREKEKILSSDDYGKDLTSVMRLLSKHRA
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LOKHALVEADIAIQAERVRGVNASAOKFATDGEGYKPCDPQVIRDRVAHMEFCYOELG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFDLPAVEAATKKHEAIETDIAAYEERVQAVVAVARELEAENYHDIKRITARKDNVIR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISVETEDNKEKKSAKDALLLWCQMKTAGYPNVNIHNFTTSWRDGMAFNALIHKHRPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="mtttvatdydnieiqqqysdvnnrwdvddwdnenssartfersr
ikaladereavqkkrftkwvnshlarvscritdlytdlrdgrwlikllevlsgerlpk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NKAWERLEKAEHERELALRNELIRQEKLEQLARRFDRKAAMRETWLSENQRLVSQDNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FSKMKALAVEGKRIGKVLDNAIETEKMIEKYESLASDLLEWIEQTIIILNNRKFANSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIDFDKLKKSNAHYNLQNAFNLAEQHLGLTKLLDPEDISVDHPDEKSIITYVVTYYHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PTKGRMRIHCLENVDKALQFLKEQRVHLENMGSHDIVDGNHRLTLGLIWTIILRFQIQ
                                                                                                                                                                                                                                              7561 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Identity: 100.000
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Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7524
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                                                                                                                                                                                                                                          13-JAN-1995
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BASE COUNT ORIGIN

2146 a

1894 c

2136 g

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FEATURES
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TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of beta-spectrin
J. Biol. Chem. 2
92406787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \operatorname{Hu}, \operatorname{R}, \operatorname{J} . Watanabe, M. and Bennett, V. Characterization of human brain cDNA encoding the general isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 7561)
                                                                                                                                                                                                                                                                                                                                      EDETLMVGERMPLATSTDHGHNLQTVQLLIKKNQTLQKEIQGHQPRIDDIFERSONIV
TDSSSLSAEAIRORLADLKQLÆGLLIEETEKRHRRLEEAHRAQQYYFDAAEAEAMMSE
QELYMMSEEKAKDEQSAVSMLKKHQILEQAVEDYAETVHQLSKYSKALVADSHPESSER
ISMROSKVDKLYAGLKOLAEERRGKLDERHRLFQLNREVDDLEOMIAEREVAACSHEL
GODYEHVTMLQERFREFARDTGNIGQERVDTVNHLADELINSGHSDAATIAEWKDGLN
EAWADLLELIOTRTQILAASYELHKFYHDAKEIFGRIQDKHKKLPEELGRDQNTVETL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QAILSRLAEISDVWEENKTILKRREASLGEASKLOOFLKDLDDFOGWLSRTOTAIASE
DMPNTLTEAEKLLTOHENIKNELDNYEEDYOKKRDMGENYTOGOTDAOYMFLRORLOA
LDTGWNELHKMMENRONLLSOSHAYOOFLRDTKOAEARINQEYVLAHTEMPTILEGA
EAAIKKOEDFMTTMDANEEKINAVVETGRRLYSGAINSDRIOEKVDSIDDRHKKNRE
TASELLMRLKDNRDLOKFLODCQELSLMINEKHLTAQDMSYDEARNLHSKWLKHQAFM
AELASNKEWLDKIEKEGMOLISEKPETEAVVKEKLTGLHKMWEVLESTTOTKAORLFD
ANKAELFTOSCADLDKWLHGLESGIOSDDYGKHLTSVNILLKKOOMLENOMEYWKKEL
EELQSSAQALSQEGKSTDEVDSKRLTVOTKFWELLEPLNERKHILLSKEIHOFNRDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LMEY LLELLRARRORLEMNIGILOR I FORMLY I NOMMDEMKVLVLSODVCKHLLGVEDL LORHTLYVEAD I CI JOAERV REVUNASAQKE AT DOEGY K PCDPOVL RDR VAHMEFCY QELC QLAAERA RLEESERKIMK FTWEAM SEEGEM I REKEK I LISS DDYGKDLT SYMR LLSKHRA FEDEMSGRSGHFEQAI KEGEDMI AEEHFGSEKI RER II Y I REOMANLEOLSAITKKKL EEASLLHOFOADADDIDAMILDI LKI VGSSDVGHDEYST OSLVKKKKOVAEET ANYRP TLOTLHEOGASALPOEHAESPDVRGRLSGI EERY KEVAELT RLRKQALODTLAKJ VKOF EADACELM I DEK EQWLNIMO I PEK LEDLEV I OHRFESLEP EMNIQASERVAVVO I ARO LAHISGHP SEKEI KAQODKLINTWSOFFRELVDRKKDALLSALSI ONYHLECNETK SWI R
                                                                                                                                                LEVHQFSRDASVAEAMLLGQEPYLSSREIGQSVDEVEKLIKRHEAFEKSAATWDERFS
ALERLTTLELLEVRRQQEEEERKRRPPSPEPSTKVSEEAESQQQWDTSKGEQVSQNGL
                                                                                                                                                                                                                                                                    QRMHTTFEHDIQALGTQVRQLQEDAARLQAAYAGDKADDIQKRENEVLEAWKSLLDAC
ESRRVRLVDIGDKFREFSMVRDLMLWMEDVIRQIEAQEKPRDVSSVELLMNNHQGIKA
SSDKHEVSASTQSTPASSRAQTLPTSVVTITSESSPGKREKDKEKDKEKRFSLFGKKK
                                                                      RTQETPSAQMEGFLNRKHEWEAHNKKASSRSWHNVYCVINNQEMGFYKDAKTAASGIP
                                                                                                                   PAEQGSPRMAETVDTSEMVNGATEQRTSSKESSPIPSPTSDRKAKTALPAQSAATLPA
                                                                                                                                                                                                                                   EIDARNDSFTTCIELGKSLLARKHYASEEIKEKLLQLTEKRKEMIDKWEDRWEWLRLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GFDLPAVEAATKKHEAIETDIAAYEERVQAVVAVARELEAENYHDIKRITARKDNVIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IKALADEREAVOKKTFTKWVNSHLARVSCRITDLYTDLRDGRMLIKLLEVLSGERLPK
PTKGRMRIHCLENVDKALOFLKEORVHLENMGSHDIVDGNHRLTLGLIWTIILRPOIO
DISVETEDNKEKKSAKDALLLWCOMKTAGYPNVNIHNFTTSWRDGMAFNALIHKHRPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKTKVIESTQDLGNDLAGVMALQRKLTGMERDLVAIEAKLSDLQKEAEKLESEHPDQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NKAWERLEKAEHERELALRNELIRQEKLEQLARRFDRKAAMRETWLSENQRLVSQDNF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIDFDKLKKSNAHYNLQNAFNLAEQHLGLTKLLDPEDISVDHPDEKSIITYVVTYYHY
FSKMKALAVEGKRIGKVLDNAIETEKMIEKYESLASDLLEWIEQTIIILNNRKFANSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="beta-spectrin"
/protein_id="AAA60580.1"
/db_xref="GI:338443"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chem. 267 (26), 18715-18722 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MTTTVATDYDNIEIQQQYSDVNNRWDVDDWDNENSSARLFERSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /dev_stage="2-year old"
/tissue_type="brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="GDB:G00-120-386"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="SPTBN1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SPTBN1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tissue_lib="lambda gtll and lambda ZAPII"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
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540 551 570 570 570 720 747

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/SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA40197 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA46197 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA46097 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA66683 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA66683 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA66683 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA45014 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA45014 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA129101 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA129101 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA12967 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA12967 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA12967 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA41967 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA41967 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA403356 8 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA40424 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA46442 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA46441 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA46441 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA46441 + SIDS2/gcgdata/geneseq/geneseqn/NA1999. DAT: AAA46441 + SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA103815 - SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA103815 - SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA103815 - SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA103815 - SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT: AAA6441 + SIDS2/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Command line parameters:
-MODEL-frame+_p2n.model -DEV=xlh
-O-/cgn2_1/US970_spool/US99750590/runat_10042002_145525_11902/app_query.fasta_1.1480
-OB-/cgn2_1/US970_spool/US99750590/runat_10042002_145525_11902/app_query.fasta_1.1480
-DB-N_Geneseq_1101 -OPMT-fastap -SUFFIX=011.rng -GAPOP=4.500
-GAPEXT=0.050 -MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-GAPEXT=0.050 -GAPEXY=0.050 -XCAPOP=-60.000 -XGAPEXT=60.000
-FGAPOP=6.000 -FGAPEXY=7.000 -YCAPOP=60.000 -YGAPEXT=60.000
-DELOP=6.000 -FGAPEXT=7.000 -START=1 -MATRIX=01190
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE-quality
-THR_MIN=1 -ALIGN=45 -MODE-LOCAL -OUTENT=pfs -NORM-ext
-HEAPSIZE=500 -MINLEN=0 -MAXLEN=20000000
-USER-US09750590_@CGN1_1_331 -NCPU=6 -ICPU=3 -LONGLOG
-DEV_TIMEOUT=120 -WARR_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Search information block:
Query: US-09-750-590-2
Query length: 1401
Database: N_Geneseq_1101:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database: N_Geneseq_1101:*
Database sequences: 930621
Database length: 428662619
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XGAPEXT and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd
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    1.0e+03
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144.06
150.85
161.00
165.87
166.62
184.92
184.92
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257.50
280.32
288.98
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.5e-27
.5e-27
.7e-13
.5e-12
.5e-12
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.7e-31
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       alignment_scores:
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seq_documentation_block:
ID AAX40197 standard; DN
AC AAX40197;
XX Cancer associated ant KW breast cancer; colon KW breast cancer; colon KW prostate cancer; ss.
XX Homo sapiens.
XX W09904265-A2.
XX W09904265-A2.
XX W15-JUL-1998; 98WO-1 PN W09904265-A2.
XX W15-JUL-1997; 97US-1 PN W10-CT-1997; 97US-1 PR 10-CT-1997; 97US-1 PR 10-CT-19
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/SIDS2/gcgdata/geneseq/geneseqn/NA2000. DAT:AAC35479
/SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT:AA116579
/SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT:AA11659649
/SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT:AAR222599
/SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT:AAH06793
/SIDS2/gcgdata/geneseq/geneseqn/NA2001. DAT:AAH066945
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                                                       The invention relates to a method for diagnosing a disorder characterised by expression of a human cancer associated antigen precursor coded for by a nucleic acid molecule (NAM). The method comprises: (a) contacting a biological sample isolated from a subject with an agent that specifically pinds to the NAM, an expression product or a fragment of an expression product complexed with an HLA molecule; and (b) determining the interaction between the agent and the NAM or the expression product as a determination of the disorder. The products and methods can be used in the diagnosis, monitoring, research, or treatment of conditions characterised by the expression of various cancer associated antigens. The invention provides nucleic acid sequences and encoded polypeptides which are cancer associated antigen precursors expressed in human breast cancer, renal cancer, colon cancer, gastric cancer, prostate cancer and lung cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cancer associated antigen; diagnosis; research; treatment; human; hreact rancer; colon cancer; qastric cancer; renal cancer; lung c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 67; Page 776-777; 787pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New isolated cancer associated nucleic acids and polypeptides isolated using sera from cancer patients, used to develop profor the diagnosis, monitoring or treatment of cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence of C3Vs gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1999-132448/11.
DB; AAY06996.
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97US-0896164.
97US-0061599.
97US-0061765.
97US-0048705.
97GB-0021697.
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Scanlan MJ,
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Quality:

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Length:

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0 other;

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seq_documentation_block:

ID AAH75522 standard; cDNA; 2222 BP.

XX AC AAH75522;

XX 18-OCT-2001 (first entry)

XX DT 18-OCT-2001 (first entry)

XX DE Human myosin heavy chain 74 encoding the properties of the human immunodeficiency virus; ss.

XX Human; myosin heavy chain 74; diseases, e.g. cantion/Qualifiers for the human immunodeficiency virus; ss.

XX Location/Qualifiers for 70..2103

ET CDS 70..2103

FT CDS
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US-09-750-590-2 x AAX40197
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Percent Similarity: 100.000
   The invention relates to human myosin heavy chain 74 useful for treating diseases, e.g. cancer, human immunodeficiency virus (HIV) infection. The present sequence is that of the human myosin heavy chain 74 encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polypeptide-human myosin heavy chain 74 said polypeptide -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; myosin heavy chain 74; disease; cancer; HIV; infection;
human immunodeficiency virus; ss.
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                                                                                                                           Claim 6; Page 25-26 Disclosure; 36pp; Chinese.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    heavy chain 74 encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= a
/product= "myosin heavy chain 74"
/note= "claimed in claim 6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
70..2103
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seq_documentation_block:
ID AAV83134 standard; cD
XX AAV83134;
XX O2-MAR-1999 (first e
XX Polynucleotide clone
XX Clone: secreted prote
KW Clone: secreted prote
KW Interferons, colony s
KW tumour invasion; tumo
OS Homo sapiens.
XX Interferons
XX Voyen
FT CDS 152..
FT CDS /*tag
FT CDS /*tag
FT CDS 98WO-U
XX Voyen
FT CDS 98WO-U
XX Voyen
FT CDS 98WO-U
XX Voyen
FT 23-APR-1998: 98WO-U
XX 24-APR-1998: 98US-U
PR 25-APR-1997: 97US-U
XX 25-APR-1997: 97US-U
XX Agostino MJ, Jacobs
FI Racie LA, Spaulding
XX Agostino MJ, Jacobs
FI Racie LA, Spaulding
XX Agostino MJ, Jacobs
FI Racie LA, Spaulding
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US-09-750-590-2 x AAH75522
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Polynucleotide clone du410_5 encoding a secreted protein
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     New polynucleotides encoding secreted human proteins - are derived from human foetal brain, adult brain, adult blood or placenta cDNA libraries, useful, e.g. as potential immunomodulators
                                                                                                                                                                                   Agostino MJ, Jacobs
Racie LA, Spaulding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA
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||||||||
3 CTCACCTAC 1881
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                                                                                                                                                                                Jacobs K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
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97US-0845296.
                                                                                                                                                                                                                                                                                                                                                                                            98WO-US08336
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/product= Secreted_protein
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                                                                                                                                                                                   Lavallie I
Treacy M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
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Gaps:
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                                                                                                                                                                                                                , MĽ
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seq_documentation_block:
ID AAF66083 standard; cf
XX AAF66083;
XC AAF66083;
XX D7 09-APR-2001 (first e
XX Novel human polynucle
XX Human; cytostatic; ge
XX Human; cytostatic; ge
XX Homo sapiens.
XX W0200102568-A2.
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XX PN W02
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US-09-750-590-2 x AAV83134
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                   (CHIR ) CHIRON CORP. (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                         30-JUN-2000; 2000WO-US18374.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel human polynucleotide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAF66083 standard; cDNA; 371 BP
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      Escobedo J,
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99US-0142311.
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         Innis MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO: 1839
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      Garcia PD,
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      Klinger J,
      Kassam
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seq_documentation_block:
ID AAF66074 standard; cE
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AC AAF66074;
XY
O9-APR-2001 (first e
XX
DT 09-APR-2001 polynucle
XX
DE Novel human polynucle
XX
KW Human; cytostatic; ge
KW breast cancer; lung c
XX
OS Homo sapiens.
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OS Homo sapiens.
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PN W0200102568-A2.
XX
PN W1-JAN-2001.
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Percent Similarity:
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                                                                                                                                                                 Novel human polynucleotide,
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Crkenjakov R,
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                                                                                                                 cytostatic; gene therapy; cancer; lung cancer; cancer
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to: AAF66083
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, Drmanac S,
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Dickson M,
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Gaps: 0
Percent Identity: 100.000
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                                                                                                                  cancer detection;
                                                                                                                                                                 SEQ ID NO: 1830.
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kson M, Labat I,
Strache-Crain B;
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                                                                                                                                  colon cancer;
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, Leshkowitiz
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seq_documentation_block:
ID AAI29101 standard; cI
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AC AAI29101;
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DE Colon tumour related
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Reinhard C, R
Crkenjakov R,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Library of polynucleotides for diagnosing a cancerous state of mammalian cell and detecting cancer, particularly of the colon prostate, comprises 3351 human polynucleotide sequences -
                                                                                                                                                                                                             145
                                                                                                                                                                                                                                             151
                                                                                                                                                                                                                                                                                                               134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 9; Page 805; 1046pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-091805/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-JUL-1999;
02-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CHIR ) CHIRON CORP. (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                  45
                                                                                                                                                                                                                              spValAspGlyArgThrProLeuValLeuAlaThrGlnMet 164
                                                                                                                                                                                                                                                                                                OSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaLysA 15]
                                                                                                                                                                                                                                                                                                                                               GACCTGCAGGGAAGAACTGCACCTTCACGATGCCGCAATGGCAGATTGTCC
                                                                                                                                                                                                                                                                                                                                                                  AspLeuGlnGlyArgThrAlaLeuH1sAspAlaAlaMetAlaAspCysPr 134
                                                                                                                                                                                                                                                                             TTCTAGCATACAGCTGCTTTGTGACCATGGGGCCTCTGTGAATGCCAAAG
                                                                                                                                                                                                           ATGTAGACGGGCGACACCACTTGTTCTGGCTACTCAGATG 185
                                                                                                                                                                       /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI29101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Garcia V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Randazzo F,
RAndazzo F,
R, Drmanac S,
rcla V, Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP;
                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000WO-US18374
                     related determined
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99US-0142311
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1.000
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                                                                                                                         CDNA; 441
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Kennedy GC, Pot D, I
Dickson M, Labat I,
LW, Strache-Crain B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Identity: 100.000
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                                                                                                                         ВР
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                                                                                                                                                                                                                                                                                                                                                                                                                  Н
                   cDNA sequence for clone CT2-55
                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G; 93
                                                                                                                                                                                                                                                                                                                                                                                                                  401
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a PD, n. D, Lamson G, L. D, Leshkowitiz D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47
                                                                                                                                                                                                                                                                                                                                               94
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manac R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Þ
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alignment\_block: US-09-750-590-2 x AAI29101

Percent Similarity:

Align seg 1/1 to: AAI29101

from:

ç O:

alignment\_scores:

Quality:

Ratio:

47.00 1.000 100.000

Percent

Identity:

Gaps:

47 0 100.000

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The present invention describes colon tumour associated proteins (I) and (II) and (II) can be used in gene therapy and vaccine production. (I) and (II) may be used in the prevention, diagnosis and treatment of diseases (I) may be used in the prevention, diagnosis and treatment of diseases (C associated with inappropriate colon tumour associated protein (TCAP) (C expression, such as colonic cancer. For example, (I) and (II) may be used to treat disorders associated with decreased expression by (C rectifying mutations or deletions in a patient's genome that affect the ceactivity of TCAPs by expressing inactive proteins or to supplement to patients own production of them. Additionally, (II) may be used to produce the TCAP proteins, by inserting the nucleic acids into a host (C cell culturing the cell to express the protein. (II) and its (C complementary sequences may also be used as DNA probes in diagnostic complementary sequences may also be used as DNA probes in diagnostic quantitate the presence of similar nucleic acids in samples, and therefore which patients may be in need of restorative therapy. (I) may calso be used as and an assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies against TCAPs and in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies may also be used (e.g., by enzyme linked immunosorbant assay (ELISA)). AAI28460 to AAI29512 and AAM24494 to AAM24523 represent nucleotide and amino acid sequences (C capture in the exemplification of the present invention.
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06-MAR-2000;
19-MAY-2000;
29-JUN-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xu J,
Sequence 441 BP; 127 A; 97 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Colon tumor associated proteins and nucleic acids useful prevention, diagnosis and treatment of colonic cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 25; Page 308; 472pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-441847/47.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORI-) CORIXA CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-AUG-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lodes MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0480321.
2000US-0504629.
2000US-0519444.
2000US-0575251.
2000US-0609448.
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Jiang Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jiang
   114 G; 102 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Benson
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seq_documentation_block:
ID AAA45014 standard; cl
XX AAA45014;
XC AAA45014;
XT 21-AUG-2000 (first 6
XX Human; mouse; chicker
KW Human; mouse; antidiabet
KW Human; mouse; disense;
KW Human; mouse; mouse, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA45014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immunomodulatory; haematopoletic; chemokinetic; aurayevan; immunomodulatory; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; antiulcer; osteopathic; neuroprotective; nootropic; antipsoriatic; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoarthritis; central nervous system disorder; alzheimer's disease; stroke; Parkinson's disease; Huntington's disease; coagulation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease; tumour; infection; depression; psoriasis; ss.
                                                                                                                                                                                                                                                                                     sequence tags (sESTs), isolated from human, mouse, chicken and rat tissue sources. The sESTs can have a range of activities depending on the tissues they were isolated from. The activities include: chemotactic; proliferative; immunomodulatory; haematopoietic; chemokinetic; analgesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidiabetic; antiasthmatic; vulnerary; antiulcer; osteopathic; neuroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                      nootropic; antiparkinsonian; antipsoriatic; cerebroprotective; anticonvulsant; and antidepressant. The sESTs can be used for gene therapy and in vaccines. The sESTs are useful as probes for the identification and isolation of full-length cDNAs and genomic DNA molecules which correspond to the SESTs. Proteins encoded by the SESTs are useful in assays for determining biological activity and raising antibodies. They may be useful for treatment of autoimmune disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   expressed sequence tag;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human secreted expressed sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAA43426 to AAA45925 represent specifically claimed secreted expressed
           (multiple sclerosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  spValAspGlyArgThrProLeuValLeuAlaThrGlnMet 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaLysA 151
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 616; 803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               мссоу лм,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Treacy M,
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           insulin dependent diabetes),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lavallie ER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bowman MR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tag SEQ ID NO:1589.
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               allergic conditions
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seq_documentation_block:
ID AAA77915 standard; cDNA; 41
XX
AC AAA77915;
XX
T1 4-NOV-2000 (first entry)
XX
DT 14-NOV-2000 (first entry)
XX
CDNA encoding human colon t
XX
Human colon tumour polypept
KW Human colon tumour polypept
KW Homo sapiens.
XX
PN W0200037643-A2.
XX
PN W0200037643-A2.
XX
PD 29-JUN-2000.
XX
Z3-DEC-1999; 99WO-US30905
XX
Z3-DEC-1999; 99US-0347496
PR 02-JUL-1999; 99US-04444247
PR 02-DEC-1999; 99US-04444247
PR 02-DEC-1999; 99US-0454156
XX
CORI-) CORIXA CORP.
XX
XX
PP Wang T, Yuqiu J;
XX
XX
WPI; 2000-442671/38.
PP PSDB; AAB11903.
XX
New colon tumor polypeptide
PT New colon tumor polypeptide
PT progression of the cancer, ar
PT progression of the cancer.
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US-09-750-590-2 x AAA45014
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers osteoporosis, osteoarthritis, central nervous system disorders (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation disorders (haemophilia, thrombosis), inflammatory disorders (Crobn's disease), tumours, bacterial, fungal or viral infections, depression sportasis, AAAA5931 represent linker variants which are gifth the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA encoding human colon tumour protein CT607,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 571 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human colon tumour polypeptide; tumour
                                   New colon tumor polypeptides especially colon cancer, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTTAATGATGTGGAAAGACTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                         diagnosis; progression;
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99US-0454150
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99US-0401064
                                                                                                                                                                                                                                                                                98US-0221298
                                                                                                                                                                                                                                                                                                              99WO-US30909
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                                                                                                                                                  Secrist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity:
                                                                                                                                                Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         568
                                     used to inhibit the development of cancer, for diagnosing and monitoring the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                  Benson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 T; 0 other;
                                                                                                                                                  DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                              SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            antigen;
                                                                                                                                                    Meagher MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41
0
100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO:195.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1307
                                                                                                                                                    Stolk
                                                                                                                                                                                                                                                                                                                                                                                                                                                             vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  depression and which are given
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ulcers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    given
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Claim

29;

Page 147;

229pp; English

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seq_documentation_block:
ID AAI28653 standard; cDNA; 421 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-750-590-2 x AAA77915
                                                                                                                                                                                                                                                                                                                                                                         seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI2865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality: 37.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CC Sequences AAA77722-A78199 represent 478 cDNAs encoding proteins or CC portions of proteins which are associated with human colon tumours. CC The invention also specifically discloses 8 human colon tumour proteins CC (AABI1897-B11904). The nucleic acids, the polypeptides they encode, and CC antigen presenting cells (APCs, preferably dendritic cells) expressing CC such polypeptides may be used in vaccines that target tumour cells, carried in the polypeptide expressing CC cancer. T-cells specific for the polypeptide expressed by the APC are CC cancer. T-cells specific for the polypeptide expressed by the APC are CC creations thereof. The sample or the isolated T-cells specific for the polypeptide can then be used to inhibit cancer development. CD4+ and/or CC CD8+ T-cells from a patient may be incubated with a polypeptide or CC close the proliferation of specific T-cells. The T-cells can be CC cloned and then administered back to the patient to inhibit can cer development. Nucleic acids encoding the polypeptides and antibodies CC against the polypeptides may be used to determine the expression level CC ancer cells are present. Such disprostic methods may also be used to intervals, and comparing the cancer by repeating the processes at time CC intervals, and comparing the cancer by repeating the processes at time CC present sequence represents a cDNA encoding a human colon time.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: AAA77915
                                                 12-JUL-2001.
             29-DEC-2000; 2000WO-US35596.
                                                                                      WO200149716-A2
                                                                                                                                                                                                          Colon tumour related determined cDNA sequence for CT607
                                                                                                                      Homo sapiens
                                                                                                                                                         immunogenic;
                                                                                                                                                                                                                                                     12-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                     410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 SerLysGlyAsnLeuGluCysLeuAsnAlaIleLeuIleHisGlyValAs
                                                                                                                                                                                                                                                                                                                                                                                                                   AGTATGGACAT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                       ysTyrGlyHis 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATTACAACCAGTGACACTGCAGGGAGAAATGCTCTTCACCTGGCTGCTA 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIleThrThrSerAspThrAlaGlyArgAsnAlaLeuHisLeuAlaAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAAAGGGGAATCTTGAGTGTTTGAATGCCATCCTTATACATGGAGTTGA
                                                                                                                                                     immunotherapy; diagr
genic; gene therapy;
                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             represents a
                                                                                                                                                                      diagnosis;
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                                                                                                                                                           vaccine;
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                                                                                                                                                                        colon cancer; colon tumour;
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                                                                                                                                                         colonic
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                                                                                                                                                       cancer; ss
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37
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alignment_scores:
                                                                                                                                                                                    CC associated with inappropriate colon tumour associated protein (TCAP)

CC expression, such as colonic cancer. For example, (I) and (II) may be

CC used to treat disorders associated with decreased expression by

CC rectifying mutations or deletions in a patient's genome that affect the

CC activity of TCAPs by expressing inactive proteins or to supplement the

CC patients own production of them. Additionally, (II) may be used to

CC produce the TCAP proteins, by inserting the nucleic acids into a host

CC complementary sequences may also be used as DNA probes in diagnostic

CC complementary sequences may also be used as DNA probes in diagnostic

CC polymerase chain reaction (PCR) and hybridisation assays to detect and

CC quantitate the presence of similar nucleic acids in samples, and

CC also be used as antigens in the production of antibodies against TCAPs

CC anti-(I) antibodies and antagonists may also be used to down regulate

CC TCAP expression and activity. The anti-(I) antibodies may also be used

CC (e.g. by enzyme linked immunosorbant assay (DEAS)). AAI28400 to AAI28512
  Quality: 37.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-DEC-1999;
10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
19-MAY-2000;
                                                                                                                                                      (e.g. by enzyme linked immunosorbant assay (ELISA)), AAI28460 and AAM24494 to AAM24523 represent nucleotide and amino acid given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention describes colon tumour associated proteins (I) and the polynucleotides (II) that encode them. (I) have cytostatic activity, (I) and (II) can be used in gene therapy and vaccine production. (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Colon tumor associated proteins and prevention, diagnosis and treatment
                                                                                                                       Sequence 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the polynucleotides (II) that encode them. (I) have cytostatic activity.
(I) and (II) can be used in gene therapy and vaccine production. (I) and
(II) may be used in the prevention, diagnosis and treatment of diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 25; Page 187; 472pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-441847/47.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JUN-2000;
28-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CORI-) CORIXA CORP.
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E, Wang T,
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2000US-0480321
2000US-0504629
2000US-0519444
2000US-0575251
2000US-0609448
2000US-0609481
                                                                                                                       BP;
                                                                                                                     109 A;
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                                                                                                                     101 C;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Benson DR,
                                                                                                                   125 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acids useful for of colonic cancer -
                                                                                                                   86 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Meagher MJ,
37
0
100.000
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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI29076
                                                                                                                                                                                                                                                                                alignment_block:
US-09-750-590-2 x AAI28653
                                                                                                                                                                                                                                                 Align seg 1/1 to: AAI28653
                                                                                                                                                                         64 SerLysGlyAsnLeuGluCysLeuAsnAlaIleLeuIleHisGlyValAs
                                        410
                                                                                                           360
                                                                        97
                                                                                                                        80 pIleThrThrSerAspThrAlaGlyArgAsnAlaLeuHisLeuAlaAlaL 97
                                                                      ysTyrGlyHis 100
                                                                                                         TATTACAACCAGTGACACTGCAGGGAGAAATGCTCTTCACCTGGCTGCTA
                                        AGTATGGACAT 420
                                                                                                                                                                                                                                                from: 1
                                                                                                                                                                                                                                                                                                                                     Percent Identity:
                                                                                                                                                                                                                                                to: 421
                                                                                                         409
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US-09-750-590-2 x AAI29076

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CC (I) and (II) can be used in gene therapy and vaccine proteins (I) and (II) may be used in the prevention, diagnosis and treatment of diseases cassociated with inappropriate colon tumour associated protein (TCAP) CC expression, such as colonic cancer. For example, (I) and (II) may be used in the prevention, diagnosis and treatment of diseases castociated with inappropriate colon tumour associated protein (TCAP) CC expression, such as colonic cancer. For example, (I) and (II) may be considered to treat disorders associated with decreased expression by CC excitivity of TCAPs by expressing inactive proteins or to supplement the CC produce the TCAP proteins, by inscrting the nucleic acids into a host CC cell culturing the cell to express the protein. (II) and its complementary sequences may also be used as DNA probes in diagnostic CC complementary sequences may also be used as DNA probes in diagnostic CC quantitate the presence of similar nucleic acids in samples, and cc therefore which patients may be in need of restorative therapy. (I) may called a santigens in the production of antibodies against TCAPs cand in assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies and antagonists may also be used to down regulate CC eag. by enzyme linked immunosorbant assay (EIISA). AAI28460 to AAI29512 and AAM24494 to AAM24523 represent nucleotide and amino acid sequences CC given in the exemplification of the present invention.
                                                   alignment_scores:
     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
19-MAY-2000;
29-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Colon tumor associated proteins and prevention, diagnosis and treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; immunotherapy; diagnosis; colon cancer; colon tumour; immunogenic; gene therapy; vaccine; colonic cancer; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 25; Page 300; 472pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Хu J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-DEC-1999;
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                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present invention describes colon tumour associated proteins (I) and polynucleotides (II) that encode them. (I) have cytostatic activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tumour related determined cDNA sequence for clone CT607
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                  Quality:
Ratio:
                                                                                                     421
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; 2000US-0504629.
; 2000US-0519444.
; 2000US-0575251.
; 2000US-0609448.
; 2000US-0649811.
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                                                                                                     BP;
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                  37.00
1.000
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Jiang Y;
                                                                                                   A
                                                                                                   101 C;
Length: 37
Gaps: 0
Percent Identity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic acids useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DR,
                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   colonic
                                                                                                     T; 0 other;
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seq_documentation_block:
ID AAC27789 standard; cDNA; 361 BP.
XX
AC AAC27789;
XX
DT 06-OCT-2000 (first entry)
XX
Human; 5' EST; expressed sequence gene therapy; chromosome mapping;
XX
Human; 5' EST; expressed sequence two gene therapy; chromosome mapping;
XX
Homo saplens.
XX
EP1033401-A2.
XX
O6-SEP-2000.
XX
C1-FEB-1999; 99US-0122487.
XX
C2-FEB-1999; 99US-0122487.
XX
DUMMAS Milne Edwards J, Duclert A,
XX
PR
WPI; 2000-500381/45.
XX
DR
WPI; 2000-500381/
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                                                                                                           The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5' ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain upstream regulatory sequences and to design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID 31864; 71pp + CD-ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New nucleic acid that is a 5' expressed sequence tag (5' EST) for obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and fo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ysTyrGlyHis 100
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herapy; chromosome mapping; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to: AAI29076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene therapy and chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Duclert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from:
                                                                                               vectors.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mapping procedures
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alignment\_scores:

68

<u>რ</u>

83 T;

2 other;

Quality: Ratio:

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seq_documentation_block:
ID AAC27957 standard; cD
XX AC AAC27957;

AC AAC27957;

AC AAC27957;

AC AAC27957;

DT O6-OCT-2000 (first e EXX below therapy; chromos SX below therapy; chromos XX gene therapy; chromos XX EP1033401-A2.

XX BP1033401-A2.

XX BP1033401-A2.

XX BP1033401-A2.

XX CEST JGENSET.

XX Dumas Milne Edwards JXX Dumas Milne Edwards JXX Dumas Milne Edwards JXX Damas Milne Edwards JXX Damas Milne Edwards JXX CEST ) GENSET.

XX Dumas Milne Edwards JXX Damas Milne Edwards JXX Dumas Milne Edwards JXX The present sequence CC Claim 1; SEQ ID 32032 XX The present sequence CC mRNAs encoding secret identified within the CC sequences usually correct identified within the CC sequences within the CC sequences usually correct identified within the CC sequences usually correct identified within the CC sequences such ESTs CC derived from the 5 cc claim 1; SEQ ID 32032 XX The present sequence CC ilbraries. Such ESTs CC derived from the 5 cc cloud sequences have to CC Libraries. Such ESTs CC cDNA sequences have to CC consecuence to obtain fill cc used to obtain fill coused to obtain fill cc used to obtai
                                                            alignment_scores:
Quality:
                                                                                                                                                                                                                                   The present sequence is one of a large number of 5' ESTs derived from CC mRNAs encoding secreted proteins. No ORF has yet been conclusively CC identified within the present sequence. The 5' ESTs were prepared from CC total human RNAs or polya+ RNAs derived from 30 different tissues. EST CC sequences usually correspond mainly to the 3' untranslated region (UTR) CC libraries. Such ESTs are not well suited for isolating cDNA sequences CC cNAs sequences have been obtained, the full 5' UTR is rarely included. CC 5' ESTs are derived from mRNAs with intact 5' ends and can therefore be cused to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain upstream regulatory sequences and to design expression and secretion vectors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-750-590-2 x AAC27789
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      Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity: 100.000
                                                                                                                                                                                    Sequence 355 BP; 110 A; 61 C; 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New nucleic acid that is a 5' expressed sequence tag (5' EST) for obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and fo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134 oSerSerIleGlnLeuLeu 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   104
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC27957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: AAC27789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   forensic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ID 32032; 71pp + CD-ROM; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; expressed sequence tag; secreted protein; cDNA isolation; chromosome mapping; ss.
      22.00
1.000
100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein 5' EST, SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene therapy and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Duclert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
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   Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID NO: 32032
                                                                                                                                                                                       120 T; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glordano
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chromosome mapping procedures
: 22
: 0
: 100.000
                                                                                                                                                                                    other;
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alignment_block:
us-09-750-590-2 x AAC27957
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to:
                       nucleic acid sequences can be used for producing secreted human gene products. They can also be used to develop products for diagnosis and therapy. The proteins obtained may have cytokine activity, cell proliferation/differentiation activity, haematopoiesis regulating activity, tissue growth regulating activity, reproductive hormone regulating activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, receptor/ligand activity, anti-inflammatory activity, tumour inhibition activity or other activities. The products can be used in forensic, gene therapy and chromosome mapping procedures. The sequences can also be used for obtaining corresponding promoter sequences. The nucleic acids encoding the signal peptide can be used for directing extracellular secretion of a polypeptide or the insertion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1371 uLeuSerAlaAlaGln 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1355
                                                                                                                                                                                                                                                 AAX40826 to AAX41093 represent 5' expressed sequence tags (ESTs) for human secreted proteins, and encode the proteins given in AAY01602 ar AAX11994 to AAX12260, respectively. The proteins given represent the signal peptide and an N-terminal fragment of a secreted protein. The
                                                                                                                                                                                                                                                                                                                                                                                    cDNA libraries prepared muscle, muscle and heart
                 of a polypeptide into a membrane,
                                                                                                                                                                                                                                                                                                                                                   Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                   New nucleic acids encoding human secreted proteins - obtained cDNA libraries prepared from kidney, fetal kidney, dystrophic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-153784/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        forensic; gene therapy; chromosome mapping; signal peptide; upstream regulatory sequence; cytokine activity; cell proliferation; differentiation; haematopolesis regulation; tissue growth regulation; reproductive hormone regulation; chemotactic; chemokinetic; haemostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; AAY12253.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-FEB-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Duclert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human secreted protein 5' EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAX41086;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            thrombolytic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AspAlaAspArgGlnHisGlnGluValIleAlaIleTyrArgThrHisLe 1371
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAX41086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 secreted protein; EST; expressed sequence tag; diagnosis,
                                                                                                                                                                                                                                                                                                                                                Page 442; 622pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dumas Milne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           anti-inflammatory; tumour inhibition; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97US-0905134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98WO-IB01238
                                                                                                                                                                                                                                                                                                                                                                                      heart tissue
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Edwards
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             importing
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SX X

Sequence

356

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alignment_block:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: AAX41086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-590-2 x AAX41086
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Polymerase chain reaction; PCR; primer; amplify; human; fibroblast; AIDS enhanced differential display; EDD; mRNA preparation; senescent cell; quiescent cell; dividing cell; senescence-related gene; gene expression; non-senescent cell; age-related lipofuscin; retina; therapy; liver spot; donor tissue; senescent melanocyte; melanin; hypoplymentation; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Probe 03C2 isolated from fibroblasts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-DEC-1996 (first entry)
                    AAT28076-T28113, and AAT28131-T28173 represent novel senescent-related gene sequences isolated from fibroblasts using the method of the invention. In the method of the invention, mRNA is isolated from a senescent cell, and a young gulescent cell, and the mRNAs are amplified (using primers such as those shown in AAT28044-T28075) in separate reaction mixtures. The amplified sequences are then separated by size or charge, and the products are analysed to identify a gene from young quiescent cells and dividing cells, that is present at a different level from senescent cells. To enhance the method even more, it can be
                                                                                                                                                                                                                                       Identifying, isolating and regulating senescence-related genes useful to ameliorate problems associated with accumulation of senescent cells, e.g. age-related lipofuscin accumulation in the retina and AIDS
                                                                                                                                                                                                                                                                                                                                  WPI; 1996-251464/25
                                                                                                                                                                                                     Claim 8; Page 36; 135pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality: 22.00
Ratio: 1.000
Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGCTGACAGACAGCACCAAGAAGTAATTGCAATTTATCGGACACACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AspAlaAspArgGlnHisGlnGluValIleAlaIleTyrArgThrHisLe 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTAGTGCTGCACAG
                                                                                                                                                                                                                                                                                                                                                                                       Funk W, Hirsch KS,
       in conjuncture with
                                                                                                                                                                                                                                                                                                                                                                                                                                                             94US-0332420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95WO-US11230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length: 22
Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                         Linskens MHK, Villeponteau
       an enhanced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
       differential display (EDD)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171
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seq_documentation_block:
ID AAA41967 standard; cDNA; 2;
XX AAA41967;
XX PAC ACAA41967;
XX PAC ACAA4196;
XX PAC ACAA4199;
XX PAC ACAA4196;
XX PAC ACAA44196;
XX PAC ACAA4196;
XX PAC ACAA44196;
XX PAC ACAAA44196;
XX PAC ACAAAA44416;
XX PAC ACAA
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US-09-750-590-2 x AAT28081
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           method (an mRNA preparation method) on the fibroblasts. The method can be used for the rapid and efficient identification and isolation of senescence-related genes and gene products, and to detect and distinguish between senescent and non-senescent cells. It can also be used to destroy cells expressing senescence specific (or related) gene products, and to screen for compounds capable of altering gene expression in senescent cells. The method can also be used to ameliorate problems associated with the accumulation of senescent cells such as age-related lipofuscin accumulation in the retina, and in the treatment of AIDS. Also, the method can be used to distinguish young cells from senescent cells in donor tissue, which is useful in removing senescent melanocytes overexpressing melanin which cause hypopigmentation, or liver spots.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunomodulatory; haematopoletic; chemokinetic; analgesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidabetic; antiasthmatic; vulnerary; antiparkinsonian; antivilcer; osteopathic; neuroprotective; nootropic; antiparkinsonian; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoarthritis; central nervous system disorder; Alzheimer's disease; stroke; Parkinson's disease; Huntington's disease; coagulation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            493 uSerGlu 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 60 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human secreted expressed sequence tag SEQ ID NO:707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; mouse; xenopus; rat; secreted expressed sequence tag; sEST;
expressed sequence tag; EST; probe; chemotactic; proliferative;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCAGAA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qual:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
Ö:
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: 1.000
: 100.000
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                                                                                                                                                             98US-0104435
                                                                                                                                                                                                                                      99WO-US24205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 depression;
                                                                                        INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from:
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Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 psoriasis;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
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Lavallie

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Collins-Racie

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Evans G

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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH13782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-750-590-2 x AAA41967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              conotropic; antiparkinsonian; antipsoriatic; cerebroprotective; canticonvulsant; and antidepressant. The sESTs can be used for gene therapy and in vaccines. The sESTs are useful as probes for the content of the sests are useful as probes for the confecules which correspond to the sESTs. Proteins encoded by the sESTs are useful in assays for determining blological activity and raising cantibodies. They may be useful for treatment of autoimume disorders (multiple sclerosis, insulin dependent diabetes), allergic conditions (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, costeoparthritis, central nervous system disorders (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation conditation contrasts. Nature, bacterial, fingal or viral infections, coagulation constrasts. AAAA3420 to AAAA3425 represent linker variants which are given to the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality: 19.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1
                                                                                                                                                                                                                                             _documentation_block:
AAH13782 standard; cDNA; 1628 BP
07-FEB-2001
                                                                                                                                  Human cDNA sequence SEQ ID NO:10713
                                 EP1074617-A2
                                                                     Homo
                                                                                                    Human; primer;
                                                                                                                                                                                                                                                                                                                                                                                                  26-JUN-2001
                                                                                                                                                                                                                                                                                                                                       168
                                                                                                                                                                                                                                                                                                                                                                      620 tLysSer 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 279 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence tags (sESTs), isolated from human, mouse, xenopus and rat tissue sources. The sESTs can have a range of activities depending on the tissues they were isolated from. The activities include: chemotactic; proliferative; inmunomodulatory; haematopoletic; chemokinetic; analgesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidiabetic; antisathmatic; vulnerary; antilucy; osteopathic; neuroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAA41261 to AAA43419 represent specifically claimed
                                                                                                                                                                                                                                                                                                                                       GAAGAGC 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 316; 618pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: AAA41967
                                                                                                                                                                        (first entry)
                                                                                         detection; diagnosis; antisense therapy; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71 G; 51 T; 0 other;
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and rat
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CC The present invention describes primer sets for synthesising 5602 CC full-length cDNAs defined in the specification. Where a primer set CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary strand of a polynucleotide which comprises one of CC oligonucleotide sequences defined in the specification, where the CC oligonucleotide comprises at least 15 nucleotides; or (b) a combination CC of an oligonucleotide comprises a sequence complementary to the CC complementary strand of a polynucleotide which comprises a 5'-end CC complementary strand of a polynucleotide which comprises a 5'-end CC complementary to a combination of CC complementary to comprise a 3'-end sequence complementary to a CC oligonucleotide comprises a 3'-end sequence, where the CC oligonucleotide comprises a 3'-end sequence, where the CC conformal comprises a 1 least 15 nucleotides and the combination of CC the 5'-end sequence3'-end sequence is selected from those defined in GC comprises a 1 least 15 nucleotides and the combination of CC the specification. The primer sets can be used in antisense therapy and CC in gene therapy. The primers sets can be used in antisense therapy and CC in gene therapy. The primers are useful for synthesising polynucleotides, CC particularly full-length cDNAs. The primers are also useful for the CC detection and/or diagnosis of the abnormality of the proteins encoded by CDNAs easily without any specialised methods. AAH3316 to AAH3363 to AAH33633 to AAH313639 to AAH33639 to AAH33639 to AAH33639 to AAH33630 crepresent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 8; SEQ ID 10713; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ota
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            full-length cDNAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isogai T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99JP-0248036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nishikawa T,
T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hayashi K, S
A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saito K, Y, Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          detection by the
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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH03594
                                                                                                                                                                                                    alignment_block:
US-09-750-590-2 x AAH13782
                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                       Align seg 1/1 to:
                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                 1321 AAAGAGAAGCTAGTAGAAGAAAATGCCAAACAGACTTCTGAGATACTTGC 1370
                                                                                                                    1069 LysGluLysLeuValGluGluAsnAlaLysGlnThrSerGluIleLeuAl 1085
                                        1371 A 1371
                                                                     1085 a 1085
                                                                                                                                                                                                                                                                                      Quality:
                                                                                                                                                                                                                                                                     Ratio:
                                                                                                                                                                       AAH13782
                                                                                                                                                                                                                                                   17.00
1.000
100.000
                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                   Percent Identity: 100.000
                                                                                                                                                                   to: 1628
                                                                                                                                                                                                                                                                     17
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Sequence

1628

BР;

707 A;

236 C;

348

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337 T; 0 other;

seq\_documentation\_block:
ID AAH03594 standard; cDNA; 848

Human cDNA clone (5'-primer)

SEQ ID NO:429

26-JUN-2001

(first entry)

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alignment_block:
US-09-750-590-2 x AAH03594
                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                cc of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end cc sequence and an oligonucleotide comprising a sequence complementary to a cc polynucleotide which comprises a 3'-end sequence, where the combination of cc the 5'-end sequence/3'-end sequence is selected from those defined in cc the specification. The primer sets can be used in antisense therapy and cc in gene therapy. The primers are useful for synthesising polynucleotides, cc particularly full-length cDNAs. The primers are also useful for the cetection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs assily without any specialised methods. AAH33165 to AAH13628 and calling and complement thuman amino acid sequences; and AAH31629 to AAH31632 crepresent oligonucleotides, all of which are used in the exemplification considered to consider the complementary to the complementary to consider the complementary to the complementary to the complementary to complementary to a complement
                                                                        Align seg 1/1 to: AAH03594
                                                                                                                                                                                                Percent Similarity:
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27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID 429; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Primer sets for synthesizing polynuclectides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-FEB-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
660 LysAlaLysLeuAlaGlnHisValLysProGluGluHisGluGln
                                                                                                                                                                                                                                                                                                                                                 Sequence 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oligonucleotide comprises at least 15 nucleotides; or (b) a combination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  full-length cDNAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                   present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       primer; detection; diagnosis; antisense therapy; gene therapy; ss.
                                                                                                                                                                                                                                                 Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isogai T,
                                                                                                                                                                                                                            Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sogai T, Nishikawa T,
Sugiyama T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                 B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99JP-0248036
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100.000
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                                                                                                                                                                                                                                                    15.00
                                                                           from: 1
                                                                                                                                                                                                  Percent
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                                                                                                                                                                                                                                                                                                                                                    164
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A, Nagai K,
                                                                                                                                                                                                Gaps:
Identity:
                                                                           6
                                                                                                                                                                                                                                                                                                                                                 <u>ი</u>
                                                                           848
                                                                                                                                                                                                                                                                                                                                                    191 T; 4 other;
                                                                                                                                                                                                  100.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Otsuki T;
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                         674
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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAV88305
                                                                                                                   88 AAGGCCAAGCTTGCTCAGCACGTCAAACCAGAGGAACATGAACAG 132
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AAVB8305 standard; cDNA; 407
 ВP
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(first entry)

Expressed sequence tag; secreted protein; haematopoiesis regulator; tissue growth; activin; inhibin; tumour invasion suppressor; EST; h chemotaxis; chemokinesis; haemostasis; gene therapy; thrombolysis; receptor; ligand; anti-inflammatory; tumour inhibitor; ds.

98WO-US06956

97US-0837312

(GEMY ) GENETICS INST INC

J, Jacobs K, Spaulding V, Lavallie ER, Treacy M; мсСоу ЈМ, Merberg Ö

1999-070078/06

New polynucleotides encoding human secreted proteins - derived from e.g. human blood, kidney, foetal lung, placenta, testes, brain, ovary, pituitary, retina and colon cDNA libraries

Page 351; 641pp; English.

seq\_documentation\_block:
ID AAV88305 standard; cl
XX
AC AAV88305;
XX
DT 12-FEB-1999 (first 6
XX
DT 12-FEB-1999 (first 6
XX
DT 12-FEB-1999 (first 6
XX
EXPRESSED sequence to the sequence to th sources. The EST sequences and proteins encoded by them are predicted to have useful biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals, although no supporting data is given. Suggested activities include nutritional activity, immune stimulating or suppressing activity, haemastopoiesis regulating activity, tissue growth activity, haemostatic activity, haemostatic activity, haemostatic and thrombolytic activity, receptor/ligand activity, anti-inflammatory activity, cadherin/tumour invasion suppressor activity, tumour inhibition activity. The EST sequences are also stated to be useful for gene The present sequence represents an expressed sequence tag (EST), and is a polynucleotide of the invention. The polynucleotides of the invention are all secreted EST sequences isolated from a variety of human tissue

177 Α; 64 ű 91 င္ပ 75 ;; 0

alignment\_block: alignment\_scores: US-09-750-590-2 x AAV88305 Ratio: Percent Similarity: Quality: 1.000 100.000 14.00 Gaps: Percent Identity: 100 . 000

900

Align seg 1/1

: 0:

from:

seq\_name:

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alignment_scores:
Quality:
                                                                                    us-09-750-590-2
                                                        Align seg 1/1
                                                                                                                               Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                cancer-associated nucleic acid molecules (N) and proteins (P), where the proteins are collectively known as colon cancer antigens. The colon cancer antigens have cytostatic activity and can be used in gene therapy and vaccine production. N and P may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate P expression. For example, N and P may be used to treat disorders associated with decreased expression by rectifying mutations or deletions in a patient's genome that affect the activity of P by expressing inactive proteins or to supplement the patients own production of P. Additionally, N may be used to produce the colon cancer-associated P, by inserting the nucleic acids into a host cell and culturing the cell to express the proteins. N and P can be used in the prevention, diagnosis and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204 and AAB77789 represent sequences used in the exemplification of the
 571
                                                                                                                                                                                                                                present invention.

N.B. Pages 666 to 682 and page 7053 of the missing at time of publication, meaning no caro TD NO:1027 to 1052, 7921 and 7922.
             376 LysGluAspMetLeuLeuLysGlnGlyGlnMetTyrMet 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Page 2661; 9803pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human
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AAAGAAGATATGCTTCTTAAACAAGGTCAGATGTATATG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                c acids encoding 4277 human colon cancer-associated polypeptides, for preventing, diagnosing and/or treating colorectal cancers -
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99US-0163280
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seq_documentation_block:
ID AAI59207 standard; cDNA; 1712 BP.
XX
AC AAI59207;
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AC AAI59207;
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AC AAI59207;
XX
DT 22-OCT-2001 (first entry)
DE Human polynuclectide SEQ ID NO 1410
KW Human; nootropic; lmmunosuppressant
KW peripheral nervous system; neuropat
KW Alzhelmer's; Parkinson's disease; H
KW amyotrophic lateral sclerosis; Shy-
KW chemokinetic; thrombolytic; drug sc
KW leukaemia; ss.
CS Homo sapiens.
XX
DF 26-JUL-2001.
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26-DEC-2000; 2000W0-US34263.
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21-JAN-2000; 2000W5-0552317.
PR 29-JUL-2000; 2000W5-0552317.
PR 29-JUL-2000; 2000W5-0552317.
PR 19-JUL-2000; 2000W5-0552317.
PR 29-JUL-2000; 
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                                                                                                                                                                                                                      The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/Inhibin activity, chemotactic/chemokinetic activity, hemoostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              perioheral nervous system; neuropathy; Central nervous system; neuropathy; Central nervous system; had alsease; Huntington's disease; had alsease; h
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system injurio
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Xu C, Xue AJ,
Drmanac RT;
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nervous system;
                  other;
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Zhang
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CC acids which are expressed in hindgut and Malpighian tubule (HMT) tissue CC or head and nerve cord (HNC) tissue. The invention also relates to the CC encoded proteins. The invention additionally encompasses expression according to recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins. CC antibodies against the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for CC administration to an animal. The nucleic acids, and the proteins they encode may be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant CC DNA methodology by inserting the nucleic acids into a host cell and CC culturing the cell to express the protein and HNC nucleic acids may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid sequences in samples. They may also be used to study the expression and CC antipodies, and in assays to identify modulators (agonists and EC cantinodies, and in assays to identify modulators (agonists and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cat flea hindgut and Malpighian tubule (HMT) cDNA, SEQ ID NO:1425
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to novel cat flea (Ctenocephalides felis) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Flea Malpighian tubule and head and nerve cord tissue derived nucleic
acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19-OCT-2000
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seq_documentation_block:
ID AAX20077 standard: DN
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AC AAX20077;
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XX 20-APR-1999 (first e
XX Enterococcus faecalis
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                                                                                   The present sequence encodes an antigenic polypeptide fragment isolated from Enterococcus faecalis. The present invention describes genes, proteins and antigenic polypeptides isolated from E. faecalis. The proteins can be used in vaccines for preventing or attenuating an infection caused by a member of the Enterococcus genus in an animal. They can also be used for detecting Enterococcus antibodies in a sample. The nucleotide sequences can be used for detecting Enterococcus nucleic acids. Products from the present invention can also be used for screening compounds to identify agonists and antagonists of E. faecalis
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                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated Enterococcus faecalis polynucleotides - used products for the detection of Enterococcus and for use in for prevention or attenuation of Enterococcus infection
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                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 119; 301pp; English.
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            165
            T; 0 other;
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alignment\_scores:

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seq_documentation_block:
ID AAX20076 standard; DN
AC AAX20076;
XX
AC AAX20076;
XX
DT 20-APR-1999 (first 6
XX
Enterococcus faecalis
XX

DE Enterococcus faecalis
XX

OS Enterococcus faecalis
XX

DS Enterococcus faecalis
XX

DS (12-NOV-1998; 98WO-1
XX

DF (04-MAY-1997; 97US-1
PR (16-MAY-1997; 97US-1
PR (16-MAY-1998; 98WO-1
PR (16-MAY-1998;
                                                                          alignment_scores:
Quality:
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US-09-750-590-2 x AAX20076
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US-09-750-590-2 x AAX20077
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Ratio: 1.000
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                                                                                                                                                                                                                                                                                                          The present sequence represents a gene isolated from Enterococcus faecalis. The present invention describes genes, proteins and antigenic polypeptides isolated from E. faecalis. The proteins can be used in vaccines for preventing or attenuating an infection caused by a member of the Enterococcus genus in an animal. They can also be used for detecting Enterococcus antibodies in a sample. The nucleotide sequences can be used for detecting Enterococcus nucleic acids. Products from the present invention can also be used for screening compounds to identify agonists and antagonists of E. faecalis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated Enterococcus faecalis polynucleotides - used products for the detection of Enterococcus and for use in for prevention or attenuation of Enterococcus infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 118-119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HUMA-) HUMAN GENOME SCI INC
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97US-0046655.
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seq_documentation_block:
ID AAV64424 standard;
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This partial nucleic acid sequence (lacking the 5' end) encodes an elf protein (see AAW81642) of the foetal murine liver. The inventic provides early developing liver proteins (see AAW81638-42) and the genes coding for them (see AAV6410-24). To isolate the genes, embryonic liver cDNA libraries were constructed at days 10.0, 11.5, 12.5 and 14.5 post coitus. These were screened with probes derived from growth factors (IGF-I, IGF-II and IGFBP-2) and transcriptional activators (C/EBP and LFB1) known to be expressed in the developing liver. Subtractive hybridisation was subsequently performed, and isolated clones were analysed for stage specificity by Southern
                                                                                                                                                                                                New isolated early liver development genes - used to develop products for treating, e.g. liver disease, hepatocellular cadegenerative neurological disorders, anaemia, ataxia or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                                                                                        Example 2; Fig 16a; 92pp; English
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P-PSDB; AAW81642.
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                                                                                                                                                                                       haemochromatosis
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794..1080
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2376..3377
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333..6797
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note- "difficulties in reading the DNA sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA; 3377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "difficulties in reading the DNA sequence Fig 16a may result in some errors in identity of individual bases in this
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alignment_block:
US-09-750-590-2 x AAV64424
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blf-2; mouse; liver development; signal transduction; biliary tree;
cholestasis; biliary stone; hepatic obstruction; stricture;
primary biliary cirrhosis; primary sclerosing cholangitis; therapy;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mouse elf-2 cDNA
             murine liver. The invention provides early developing liver proteins (see AAW81638-42) and the genes coding for them (see AAV64410-24). To isolate the genes, embryonic liver cDNA libraries were constructed at days 10.0, 11.5, 12.5 and 14.5 post coitus. These were screened with probes derived from growth factors (IGF-I,
                                                                                                                                                                    New isolated early liver development genes - used to develop products for treating, e.g. liver disease, hepatocellular ca degenerative neurological disorders, anaemia, ataxia or
                                                                                                                                                                                                                                                                                                                                                                                                                          WO9848827-A1
                                                                                          This nucleic acid sequence encodes the elf-2 protein of the foetal
                                                                                                                         Claim 2; Fig
                                                                                                                                                                                                                                      WPI; 1999-009382/01.
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 IGFBP-2) and transcriptional activators
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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAS04273
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US-09-750-590-2 x AAV64412
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                                                                                                                                                                                                                                                                                                                                   CDS
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22-MAY-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                           spinocerebellar ataxia
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                                                       2001-300498/31.
DB; AAU01183.
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2000US-0206157.
                                                                                                                                                                                                     2000WO-US29431
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                                                                                                   Jackson
                                                                                                                                                                                                                                                                                        /*tag= a
/product= "GTRAP4-41 protein"
/transl_except= (pos:6142..6150,aa:Val-Ser)
                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2022 A;
                                                                                                                                                                                                                                                                                                                                                                                                           type
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                                                                                                                                  MEDICINE
                                                                                                     Law R,
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: 0
: 100.000
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Novel substantially pure glutamate transporter associated polypeptide which modulates intracellular glutamate transport, interacts with glutamate transporter protein and has expression pattern in brain .

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seq_documentation_block:
ID AAX36583 standard; DNA; 7918 BP.
XX AAX36583;
XX O8-JUL-1999 (first entry)
XX BetaIII spectrin coding sequence.
XW BetaIII spectrin; intracellular secentry
KW Integral membrane protein; secreto:
KW integral membrane; cystic fibro:
KW plasma cell membrane; cystic fibro:
XX PNN W09916875-A1.
XX W09916875-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAX36583
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US-09-750-590-2 x AAS04273
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: AAS04273
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   Modulating intracellular sequestration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BetaIII spectrin; intracellular sequestration modulation; SAATS; spectrin-ankyrin-adapter protein trafficking/tethering system; integral membrane protein; secretory protein; endoplasmic reticulum; cis-Golgi apparatus; medial-Golgi apparatus; trans-Golgi apparatus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BetaIII spectrin coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 7240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 12;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LysAsnGlnThrLeuGlnLysGluIle 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAACCAGACTCTGCAGAAGGAGATC 4611
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cystic fibrosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      be used for modulating glutamate transport in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; 1947 C; 2289 G;
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Gaps:
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selected integral
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seq_documentation_block:
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US-09-750-590-2 x AAX36583
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Charles invention relates to a method for modulating intracellular to the invention of a selected integral membrane or secretory protein into a consist ration of a selected integral membrane or secretory protein into a consist ration of a selected integral membrane or secretory protein into a consist relative to the cis-Golgi to the medial-Golgi to the medial-Golgi apparatus, or from the endoplasmic reticulum to the cis-Golgi apparatus or from the grant consistency to the medial-Golgi apparatus or from the spectrin-ankyrin-adapter protein trafficking/tethering system (SAATS). Compounds that inhibit or enhance intracellular sequestration of selected integral membrane or secretory protein into a transport vehicle are consistent in the amount of the particular protein. Identification, of ce.g. the binding domain for CFTR (cystic fibrosis transmembrane conductance regulator) responsible for cystic fibrosis, in the conductance regulator) responsible for cystic fibrosis, in the conductance regulator) responsible for cystic fibrosis, in the conductance regulator) responsible for cystic fibrosis. The method conductance regulator protein trafficking/tethering system (SAATS), by the methods would allow early analysis of possible transport enhancing conductance that might the clinical severity of this disease. The method construction of RNA is not required and the method lends itself to high-throughput in vitro screening assays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: AAX36583
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CDS
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               30-APR-1998;
                                                    05-NOV-1998
                                                                                                                                            polyA_site
                                                                                     W09848827-A1
                                                                                                                                                                                                                                                                                            primary
                                                                                                                                                                                                                                                                                                   Elf-1; mouse; liver development; signal transduction; biliary tree;
cholestasis; biliary stone; hepatic obstruction; stricture;
                                                                                                                                                                                                                                                                                                                                                                                                         01-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            696 LysAsnGlnThrLeuGlnLysGluIle 704
                                                                                                                                                                                                                                                                                                                                                                      Mouse elf-1
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                                                                                                                                                                                                                                                                                  biliary cirrhosis; primary sclerosing cholangitis; therapy;
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               98WO-US08656.
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100.000
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8173..8176
                                                                                                                                                                                 Location/Qualifiers 333..6797
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Gaps: 0
Percent Identity: 100,000
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seq_documentation_block:
ID AAX13117 standard; DI
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AC AAX13117;
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DT 19-MAR-1999 (first of the color of th
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated early liver development genes - used to develop products for treating, e.g. liver disease, hepatocellular carcinoma, degenerative neurological disorders, anaemia, ataxia or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-009382/01.
P-PSDB; AAW81639.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             those relating to oncogenesis and tissue repair.
                                                                                                                                                                                                                                                       Enterococcus faecalis; contig; detection; Enterococcal infection;
vaccine; attenuation; computer readable medium; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAACCAGACCCTCCAGAAAGAAATC 4895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAX13117
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                                                                                                                                                                                                                                                                                                                                                              faecalis genome contig SEQ ID NO:180
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
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                                                                                                                                                                                            faecalis
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Gaps: 0
Identity: 100.000
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seq_documentation_block:
ID AAI08815 standard: DI
XX
AC AAI08815;
XX
DT 09-OCT-2001 (first 6
XX
Probe #8806 used to 1
XX
Probe; human; breast
KW Probe; human; breast
KW Inflammatory disease
XX
PN WO200157270-A2.
XX
PN WO200157270-A2.
XX
PD 09-AUG-2001.
XX
PF 29-JAN-2001; 2001WO-1
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06-MAY-1997;
16-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A computer readable medium has been developed which has recorded on it 982 nucleotide sequences isolated from the Enterococcus faecalis genome. AAX12938 to AAX13919 represent these nucleotide sequences which are primary nucleotide sequences, also known as contigs. The computer based system can identify fragments of the Enterococcus faecalis genome with commercial importance. The products can be used to detect the presence of Enterococcus faecalis in samples. They can also be used for
                                                                                                                                                                                                                                                                                                                                                                                      7492 TTGATTGATCGGGGTGCCGATATTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New isolated Enterococcus faecalis polynucleotides and polypeptides - used to develop products for the detection of Enterococcus and for the process of prevention or attenuation of Enterococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 diagnosing Enterococcal infection in an animal and monitoring progression of disease, and for identifying agents which can be used to modulate the growth or pathogenicity of Enterococcus faecalis, or another related organism, in vivo or in vitro. In particular the polypeptides encoded by the Enterococcus faecalis nucleotide sequences can be used in vaccines to prevent or attenuate an Enterococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-MAY-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                    173 LeuIleAspArgGlyAlaAspIleAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 31517 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1999-045171/04.
                                                                                                                                                                                                    probe #8806 used to measure gene expression in human breast sample.
                                                                                                                                                                     Probe; human; breast disease; breast cancer;
                                                                                                                                                  inflammatory disease;
                                                                                                                                                                                                                                                                                                                                                  /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI08815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: AAX13117
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                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-0044031.
97US-0046655.
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1.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10395 A;
                                                                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                      proliferative breast disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kunsch
                                                                                                                                                                                                                                                                                                       228 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                      from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Gaps:
Percent Identity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9216 T;
                                                                                                                                                                         development disorder; ss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                         non-carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           other;
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6

29-JAN-2001; 2001WO-US00661.

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seq_documentation_block:
ID AAIO3812 standard; DNA; 362 BP
XX AAIO3812;
XX 09-OCT-2001 (first entry)
XX DT 09-OCT-2001 (first entry)
XX Probe #3803 used to measure ge
XX Probe; human; breast disease;
XX Probe; human; breast disease;
XX Probe; human; breast prolifer
XX Probe; human; breast disease;
XX Probe; human; breast prolifer
XX Probe; human; breast disease;
XX Probe; human; breast disease; prolifer
XX Probe; Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT;AAI03812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to reverse of: AAI08815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-750-590-2 x AAI08815/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-FEB-2000;
26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
                                                                                                                                                                                                            Probe; human; breast disease; breast cancer; development disorder; ss;
                                                                                                                                                                                                                                                         Probe #3803 used to measure gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to novel single exon nucleic acid probes. The present sequence is one such probe. The probes are useful for measuring human gene expression in a human breast sample, where the probybridises at high stringency to a nucleic acid expressed in the human breast. The probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic aetiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative breast disease and non-carcinoma tumours.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 228 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Note: The sequence data for this patent did not form specification, but was obtained in electronic format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel single exon nucleic acid probe used to measuring gene expression a human breast -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Penn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MOLE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ftp.wlpo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-476286/51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25; SEQ ID No 8806; 322pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0180312.
2000US-0207456.
2000US-0608408.
2000US-0632366.
2000US-0234687.
2000US-0236359.
2000US-0236359.
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1.000
100.000
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                                                                                                                                                                                          proliferative breast disease; non-carcinoma tumour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent
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                                                                                                                                                                                                                                                       expression in human breast sample
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Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59 T; 0 other;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     228
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Synthetic.
                                                                                                                                                                                                                                                                                                                                                 AAQ03145;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MOLE-)
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seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1990.DAT:AAQ03145
                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
ID AAQ03145 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_block:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1170 LeuArgGluLysGluGluGluSer 1177
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30-JUN-2000; 2000US-0608408.
03-AUG-2000; 2000US-0632366.
21-SEP-2000; 2000US-0234687.
27-SEP-2000; 2000US-0236359.
04-OCT-2000; 2000GB-0024263.
       misc_feature
                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention relates to novel single exon nucleic acid probes. The present sequence is one such probe. The probes are useful for measuring human gene expression in a human breast sample, where the prob hybridises at high stringency to a nucleic acid expressed in the human breast. The probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic actiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative breast disease and non-carcinoma tumours.
                                                                                                                                                                                                                                                     ubiquitin hydrolase substrate; human (H2) relaxin fusion gene; ds.
                                                                                                                                                                                                                                                                                                                Encodes ubiquitin-relaxin fusion protein.
                                                                                                                                                                                                                                                                                                                                                                 16-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Note: The sequence data for this patent did not form specification, but was obtained in electronic format at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   308 CTGAGGGAGAAGAAGAGGAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 362 BP; 76 A; 112 C; 75 G; 99 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel single exon nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in a human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-476286/51.
                                                                                                                                                                                                                                                  gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25; SEQ ID No 3803;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULAR DYNAMICS INC
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                                                                                                                                                                                                                                                                                                                                                               (revised entry)
                                            /*tag= |
/label= :
complement (381..384)
                       /label= sticky_end
/note= "xbal"
                                                                                                                                      Location/Qualifiers
9..353
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1.000
                                                                                                              /*tag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Gaps:
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                                                                                                                                                                                                                                                                     B-chain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      part of the printed directly from WIPO
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seq_documentation_block:
ID AAV87895 standard; cE
XX
AC AAV87895;
XY
DT 12-FEB-1999 (first e
XX
EST clone FG401.
XX
Expressed sequence ta
KW tissue growth; activ'
KW chemotaxis; chemokine
KW receptor; ligand; ant
XX
OS Homo sapiens.
XX
PN W09845437-A2.
XX
PD 15-OCT-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                      seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1999.DAT:AAV87895
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                                                                                                                                                                                                                                                                                                                                                                                                         US-09-750-590-2 x AAQ03145/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio: 1.000 Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                           Align seg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This XbaI-HindIII fragment codes for a fusion of human (H2) relaxin B-chain (32 amino acids; the N-terminal amino acid of relaxin B-chain is missing) to ubiquitin via 6 linking amino acids. The fusion protein was expressed by E.coli transformed with the fusion gene. Inclusion of 35S-labelled Cys in the translation medium resulted in a radiolabelled fusion protein suitable for use in assays to investigate cleavage by ubiquitin hydrolase.

See also AAQ04804 and AAQ03147.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Purified ubiquitin hydrolase and DNA sequences used partic. for processing fusion polypeptide and desired polypeptide prod.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-JUN-1988;
14-DEC-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Liu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-JUN-1989;
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                                                                                    Expressed sequence tag; secreted protein; hasmatopolesis regulator; tissue growth; activin; inhibin; tumour invasion suppressor; EST; h chemotaxis; chemokinesis, haemostasis; gene therapy; thrombolysis; receptor; ligand; anti-inflammatory; tumour inhibitor; ds.
                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 380
                                                                                                                                                                                                                                                                                                                    CTTACCAGCAAAAATCAAACGCTG
                                                                                                                                                                                                                                                                                                                                               LeuThrSerLysAsnGlnThrLeu 700
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP;
                                                                                                                                                                                       (first entry)
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88US-0284281.
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/label= sticky_end
/note= "HindIII"
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1.000
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                                                                                                                                                                                                                                               CDNA; 407
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                                                                                                                                                                                                                                                                                                                     129
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t Identity: 100.000
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between ubiquitin
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The fusion
                                                                                                                     human;
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seq_documentation_block:
ID AAC77203 standard; cE
XX
AC AAC77203;
XX
AC O8-FEB-2001 (first e
DT 08-FEB-2001 (first e
DT 08-FEB
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US-09-750-590-2 x AAV87895
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence represents an expressed sequence tag (EST), and is a polynucleotide of the invention. The polynucleotides of the invention are all secreted EST sequences isolated from a variety of human tissue sources. The EST sequences and proteins encoded by them are predicted to have useful biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals, although no supporting data is given. Suggested activities include nutritional activity, immune stimulating or suppressing activity, haematopoiesis regulating activity, tissue growth activity, haemostatic and thrombolytic activity, receptor/ligand activity, anti-inflammatory activity, cadherin/tumour invasion suppressor activity, tumour inhibition activity. The EST sequences are also stated to be useful for gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New polynucleotides encoding human secreted proteins - due.g. human blood, kidney, foetal lung, placenta, testes, ovary, pituitary, retina and colon cDNA libraries
                               Human; open reading frame; ORFX; detection; cytostatic; hepatotropic; vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective; anticonvulsant; osteopathic; antiarthrito; immunosuppressant; cardiant, immunostimulant; thrombolytic; coagulant; vasotropic; antidiabetic; hypotensive; dermatological; immunosuppressive; antiinflammatory; antiviral; antibacterial; antiengal; antirheumatic; antithyroid; antianaemic; gene therapy; cancer; proliferative disorder; hypertension neurodegenerative disorder; osteoarthritis; graft vs host disease; cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; cholesterol ester storage; systemic lupus erythematosus; infection; severe combined immunodeficiency; malaria; autoimmune disorder; asthma; severe combined immunodeficiency; malaria; autoimmune disorder; asthma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 215; 641pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                        polynucleotide sequence SEQ ID NO:5515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA; 420 BP
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Gaps: 0
Identity: 100.000
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                                                                                                                                                                                hypertension;
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seq_documentation_block:
ID AAF64763 standard;
XX
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US-09-750-590-2 x AAC77203
                                                                                                                                                                                                                                                                                                                                                                   AAC74446 to AAC77606 encode the proteins given in AAB40237 to AAB43397, CC which represent the human ORFX open reading frames 1 to 3161. The ORFX CC sequences have activities such as: cytostatic; hepatotropic; vulnerary; CC antipsoriatic; antiparkinsonian; nootropic; neuroprotective; CC immunostimulant; cardiant; thrombolyfic; coagulant; vasotropic; cardidabetic; hypotensive; dermatological; immunosuppressive; CC antidabetic; hypotensive; dermatological; immunosuppressive; antiphrodiy; and antianaemic. The sequences can be used for determining the presence of or predisposition to, or preventing or treating cc pathological conditions associated with an ORFX-associated disorder. The nucleic acids can be used to express ORFX proteins in gene therapy vectors. The proteins and nucleic acids may be used to treat cancers, CC proliferative disorders, neurodegenerative disorders, osteoarthritis, CC proliferative disorders, neurodegenerative disorders, osteoarthritis, hypertension, hypothyroidism, cholesterol ester storage, systemic lupus crythematosus, severe combined immunodeficiency (SCID), AIDS, viral, CC coagulation; to inhibit thrombosis; and as a contraceptive.
                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                                                                                                                                                                                               Quality:
Ratio:
Percent Similarity:
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                                                                                                                           761 LysLysLeuGluMetGluLysLeu 768
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02-APR-1999;
05-APR-1999;
30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel nucleic acids and peptides derived from open reading useful for treating e.g. cancers, proliferative disorders, neurodegenerative disorders and cardiovascular disease -
                                                                                                                                                                                                                                                                                                                                                     Sequence 420
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-MAR-2000; 2000WO-US08621.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bone damage; cartilage damage; antlinflammatory disease; coagulation; thrombosis; contraceptive; ss.
                                                          /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAF64763
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DB; AAB42994.
                                                                                                                                                                                                                                                                                                                                                   BP;
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99US-0127636.
99US-0127728.
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1.000
100.000
                                                                                                                                                                                                                                                                                                                                                 117 A;
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                                                                                                                                                                                                                                                  Percent
                                                                                              126
                                                                                                                                                                                                                                                                                                                                               108 G; 82 T; 0 other;
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Gaps: 0
Identity: 100.000
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alignment_block:
US-09-750-590-2 x
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                                                                                            Align seg 1/1 to: AAF64763
                                                                                                                                                                      Percent Similarity:
                                                 1041 GluArgAlaLeuSerArgLysThr 1048
                                                                                                                                                                                                                                                                                                    The present sequence is one of 3351 sequences in a library of human polynucleotides. The library is used to detect differentially expressed genes correlated with a cancerous state of a mammalian cell and can detect colon, prostate, breast and lung cancer. The library can be used to produce probes for detection of mRNA and to produce additional copies of the polynucleotides. The probes can be used for chromosome mapping of the polynucleotides and for detection of transcription levels. Ribozymes or antisense oligonucleotides can be generated. The polynucleotides and their gene products are used as genetic or biochemical markers (e.g. in blood or tissues) that will detect the earliest changes along the carcinogenesis pathway and/or monitor the efficacy of therapies and preventive interventions. The polynucleotides, polypeptides and antibodies against them can be used in pharmaceutical compositions to treat the cancers and proliferative disorders such as neoplasia,
                                                                                                                                                                                                                                                              Sequence 422 BP; 134 A; 111 C;
                                                                                                                                                                                                                                                                                          dysplasia and hyperplasia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Library of polynucleotides for diagnosing a cancerous state of mammalian cell and detecting cancer, particularly of the colon prostate, comprises 3351 human polynucleotide sequences -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Williams LT,
Reinhard C,
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02-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CHIR ) CHIRON CORP. (HYSE-) HYSEQ INC.
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breast cancer; lung
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                                 GAGAGAGCGCTCTCTAGAAAAAAA 321
                                                                                                                                                                                                    Quality:
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R, Drmanac S,
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99US-0142311
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                                                                                            from: 1
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Dickson M,
                                                                                                                                                                Length: 8
Gaps: 0
Percent Identity: 100.000
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Kennedy GC, Pot D, 1
Dickson M, Labat I,
LW, Strache-Crain B;
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Lamson G, Drm
Leshkowitiz
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tiz D;
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DNA;

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seq_documentation_block:
ID    AAI31708 standard; DI
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AC    AAI31708;
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DT    17-OCT-2001 (first 6
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US-09-750-590-2 x AAI10455
                                                                                                                                                                                                                              alignment_scores:
                                                                        seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI31708
                                                                                                                                                                                        Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                        Align seg 1/1 to: AAI10455
                                                                                                                                                                                                                                                                                         The present invention relates to human single exon nucleic acid probes (SENP). The present sequence is one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
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03-AUG-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                          Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells -
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26-MAY-2000;
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                                                                                                        246 SerAsnLysGlyArgGluLeuTrp 253
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27-SEP-2000;
                                                                                                                                                                                                                                                            Sequence 471 BP; 133 A; 81 C; 124 G; 133 T; 0 other;
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                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences.
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                                                                                              AGCAATAAAGGAAGAGAGTTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-488901/53.
                                                                                                                                                                                                                                                                                                                                                                                                       25; SEQ ID No 388; 487pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULAR DYNAMICS INC
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2000US-0632366.
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2000US-0236359.
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 (first entry)
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                                           DNA; 471
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                                                                                                                                          from: 1
                                                                                                                                                                                               Percent
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Gaps:
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alignment_block:
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Percent Similarity:
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26-MAY-2000;
30-JUN-2000;
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21-SEP-2000;
27-SEP-2000;
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genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to single exon nucleic acid probes (SENP). The present sequence is one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Penn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Probe #394 used to measure gene expression in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 471 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human genome-derived single exon nucleic acid probes useful analyzing gene expression in human placenta \boldsymbol{\cdot}
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                                                                                                                                                                                                                                                                                                                                               246 SerAsnLysGlyArgGluLeuTrp 253
                                                                   Probe; human; breast disease; breast cancer; development disorder; ss;
inflammatory disease; proliferative breast disease; non-carcinoma tumour.
                                                                                                                                                                                                                                                                                                               86 AGCAATAAAGGAAGAGAGTTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-488897/53.
                                                                                                                                                                                                                                                                          /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI00391
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                                                                                                                       #382 used to measure gene expression in human breast sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
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2000US-0608408.
2000US-0632366.
2000US-0234687.
2000US-0236359.
                                                                                                                                                                                                                                                                                                                                                                                                                      x AAI31708
                                                                                                                                                        (first entry)
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1.000
100.000
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                                                                                                                                                                                                                               DNA; 471 BP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length: 8
Gaps: 0
Identity: 100.000
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seq_documentation_block:
ID AAC94987 standard; cDNA; 540 BE
XX
AC AAC94987;
XX
DT 19-FEB-2001 (first entry)
XX
Cat flea hindgut and Malpighian
XX
KW Cat flea; hindgut and Malpighian
XX
KW flea infestation; vaccine; anti
XX
OS Ctenocephalides felis.
XX
PN W0200061621-A2.
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US-09-750-590-2 x AAI00391
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Quality:
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Ratio: 1.000
Percent Similarity: 100.000
                                                          Cat flea; hindgut and Malpighian tubule nucleic acid; HMT; flea infestation; vaccine; antiparasitic; therapeutic target; diagnosis; detection; ss.
                                                                                                                              Cat flea hindgut and Malpighian tubule (HMT) cDNA, SEQ ID NO:1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to novel single exon nucleic acid probes. The present sequence is one such probe. The probes are useful for measuring human gene expression in a human breast sample, where the probe hybridises at high stringency to a nucleic acid expressed in the human breast. The probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic actiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative breast disease and non-carcinoma tumours.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-FEB-2000;
26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 471 BP; 133 A; 81 C;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Penn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel single exon nucleic acid probe used in a human breast .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MOLE-) MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JAN-2001; 2001WO-US00661
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                          AGCAATAAAGGAAGAGAGTTGTGG 109
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2000US-0608408
2000US-0632366
2000US-0234687
2000US-0236359
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                                                                                                                                                                                                                                                                                                                                                                                             from: 1
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Gaps: 0
Identity: 100.000
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CC acids which are expressed in hindgut and Malpighian tubule (HMT) tissue. CC archeology by the invention ally encompasses expression are expressed in hindgut and malpighian tubule (HMT) tissue. The invention also relates to the cor head and nerve cord (HNC) tissue. The invention also relates to the cor rhead and nerve cord (HNC) tissue. The invention also relates to the cor rhead and nerve combinant production also relates to the constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the proteins, a method of identifying inhibitors of the proteins, and composition, recombinant production of the proteins of the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for administration to an animal. The nucleic acids, and the proteins they cannot be used in the prevention, treatment and diagnosis of diseases associated with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant custom the cell to express the protein according to standard recombinant custom the cell to express the protein according to standard recombinant custom the cell to express the protein according to standard recombinant custom quantitate the presence of cat fleas or other homologous nucleic acids and quantitate the presence of cat fleas or other homologous nucleic acid sequences in samples. They may also be used to study the expression and continuous to the proteins and their role in metabolism. The HMT and HNC contains and their role in metabolism. The HMT and HNC cat antagonists and antibodies and antagonists and activity. The antibodies may also be used to downregulate protein expression and activity. The antibodies may also be used as diagnostic agents for detecting the presence of flea polypeptides in samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The proteins according to the protein assay (ELISA).
           Sequence 540 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 26; Page 730-731; 964pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to novel cat flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-656323/63.
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                                                         sequence represents a cat flea HMT cDNA of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0128704
     198 A;
85 C; 101 G; 155 T; 1 other;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Ctenocephalides felis) nucleic
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DEXTX

17-OCT-2000

(first entry)

Arabidopsis thaliana DNA fragment SEQ ID NO: 10346.

seq\_documentation\_block:
ID AAC35479 standard;

DNA; 551

ВP

seq\_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC35479

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990S-0139454. 990S-0139455. 990S-0139457. 990S-0139457. 990S-0139459. 990S-0139461. 990S-0139461. 990S-0139462. 990S-0139463. 990S-0139463. 990S-0139763. 990S-0139763. 990S-0139763. 990S-0139763. 990S-0139763.	990S-0134219. 990S-0134370. 990S-0134768. 990S-0134314. 990S-0135124. 990S-013523. 990S-0136021. 990S-0136021. 990S-0136021. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528. 990S-0137528.	99US-0126264. 99US-0127462. 99US-0128234. 99US-012845. 99US-0130077. 99US-0130049. 99US-0130449. 99US-0130449. 99US-0132448. 99US-0132484. 99US-0132486. 99US-0132487. 99US-0132487. 99US-0132487. 99US-0132487. 99US-0132487.	assay; genetic fication; signa way; promoter; aliana. aliana.  000EP-0301439. 99US-0121825. 99US-0123180. 99US-0123180.
	•		mapping; gene expression 1 transduction pathway; termination sequence; ss
			ssion control; vay; ss.
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-AUG-1	UIL-1999		3-JUN-19 4-JUN-19 9-JUN-19 0-JUN-19 11-JUL-19
99US - 0148684 99US - 0149175 99US - 0149175 99US - 0149426 99US - 0149722 99US - 0149723 99US - 0149929 99US - 0149930 99US - 0150566 99US - 0151065 99US - 0151065 99US - 0151066 99US - 0151066 99US - 0151080	990S-0145276. 990S-0145913. 990S-0145919. 990S-0146386. 990S-0146388. 990S-0146388. 990S-0147038. 990S-0147704. 990S-0147303. 990S-0147260. 990S-0147260. 990S-0147261. 990S-0147313. 990S-0147416. 990S-0147416. 990S-0147416.	990S-0144086. 990S-0144331. 990S-0144332. 990S-0144333. 990S-0144334. 990S-0144334. 990S-01446632. 990S-0145086. 990S-0145086. 990S-0145086. 990S-0145087. 990S-0145182.	99US-0140353. 99US-0140695. 99US-0140695. 99US-0140991. 99US-0141287. 99US-0141287. 99US-014205. 99US-014205. 99US-014205. 99US-0142090. 99US-0142090. 99US-0142090. 99US-0142090. 99US-014209. 99US-014209.

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14-OCT-1999;
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99US-0159584.
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99US-0159293
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99US-0158029
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alignment_block:
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Percent Similarity: 100.000
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                        genetic disorder;
                                                                                                                                                                                                                              403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to human single exon nucleic acid probes (SENP). The present sequence is one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at fip.wipo.int/pub/published_pct_sequences.
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21-SEP-2000;
27-SEP-2000;
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26-MAY-2000;
30-JUN-2000;
                                  Probe; microarray; human; placenta; antenatal diagnosis;
                                                               Probe #8335 used to measure gene expression in human placenta
                                                                                               17-OCT-2001
                                                                                                                             AAI39649;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 570 BP; 137 A; 150 C; 138 G; 145 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 25; SEQ ID No 6505; 487pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human genome-derived single exon nucleic acid probes useful analyzing gene expression in human cervical epithelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-488901/53.
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2000US-0207456.
2000US-0608408.
                                                                                             (first entry)
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2000US-0234687.
2000US-0236359.
2000US-0024263.
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Percent Identity:
                                                                                                                                                       ВP
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seq_documentation_block:
ID AAF22599 standard; cl
XX
AC AAF22599;
XX
26-MAR-2001 (first 6
XX
DT 26-MAR-2001 cancer 8
XX
Human breast cancer 8
XX
Human; breast cancer 8
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Hum
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US-09-750-590-2 x AAI39649/rev
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26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to single exon nucleic acid probes (SENP). The present sequence is one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   403
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                                                                                                                                      26-MAY-2000; 2000WO-US14749
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Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     breast cancer; gastric cancer; prostate cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         570
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2000US-0632366.
2000US-0234687.
2000US-0236359.
2000US-0024263.
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2000US-0207456.
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            99US-0136526
99US-0153454
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               antigen; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 associated antigen nucleotide sequence SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .>
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Gaps:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cancer vaccine;
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alignment_block:
US-09-750-590-2
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 seq_documentation_block:
ID AAH06793 standard;
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Percent Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                      1168 AlaSerLeuArgGluLysGluGlu 1175
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding breast, gastric and prostate cancer associated antigen precursors, useful for diagnosing and treating a condition characterized by expression of an abnormal amount of a protein, e.g.
                                                                            29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 50;
 Ota T,
Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                              201 GCTTCGCTGCGGAGAAGGAGGAG
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                                                                                                                                                                                                                                                                    Human cDNA clone (5'-primer)
                                                                                                                                                                                                                                                                                                                       AAH06793;
                                                                                                                                                                   07-FEB-2001
                                                                                                                                                                                           EP1074617-A2
                                                                                                                                                                                                                                            Human; primer;
                                                                                                                                                                                                                                                                                              26-JUN-2001
                                                                                                                                           28-JUL-2000;
                                     (HELI-) HELIX RES INST.
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Isogai T,
3, Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page
                                                             ; 99JP-0248036.
; 99JP-0300253.
; 2000JP-0118776.
; 2000JP-0183767.
; 2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         x AAF22599
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                                                                                                                                                                                                                                                                                              (first entry)
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1.000
100.000
                                                                                                                                                                                                                                              detection; diagnosis; antisense
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  Nishikawa T,
T, Wakamatsu
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Gaps: 0
Percent Identity: 100.000
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  Hayashi K,
A, Nagai K,
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5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87 T;
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              Saito K,
                                                                                                                                                                                                                                              therapy; gene therapy;
     Otsuki
     7
                Yamamoto J;
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seq_documentation_block:
ID AAH06245 standard; cD
XX
AC AAH06245;
XX
DT 26-JUN-2001 (first e
XX
DT 26-JUN-2001 clone (5'-
XX
Human cDNA clone (5'-
XX
Human; primer; detect
XX
Human saplens.
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PN EP1074617-A2.
XX
PD 07-FEB-2001.
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PD 07-FEB-2001.
XX
PP 28-JUL-2000; 2000EP-0
XX
PR 29-JUL-1999; 99JP-0
PR 29-JUL-1999; 99JP-0
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US-09-750-590-2 x AAH06793/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH06245
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides particularly full-length cDNNs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and AAH13633 to AAH18742 represent human cDNA sequences; AAB92446 to AAH365893 represent human amino acid sequences; and AAH13632 to AAH13632 and AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end
                                                                                                                                                                                                                                                                        Human cDNA clone (5'-primer) SEQ ID NO:3080
                                                                                                                                                                                                                                                                                                                                                                                                     AAH06245 standard; cDNA; 747 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 720 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence and an oligonucleotide comprising a sequence complementary to a polynucleotide which comprises a 3'-end sequence, where the oligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; SEQ ID 3628; 2537pp + CD ROM; English
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                                                                  2000EP-0116126
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    99JP-0248036
99JP-0300253
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CC sequence and an oligonucleotide comprising a sequence complementary to a CC polynucleotide which comprises a 3'-end sequence, where the CC oligonucleotide comprises at least 15 nucleotides and the combination of CC the 5'-end sequence/3'-end sequence is selected from those defined in CC the specification. The primer sets can be used in antisense therapy and CC in gene therapy. The primers are useful for synthesising polynucleotides, CC particularly full-length cDNAs. The primers are also useful for the CC detection and/or diagnosis of the abnormality of the proteins encoded by CC cDNAs easily without any specialised methods. AAH33162 to AAH3363 to AAH3742 represent human cDNA sequences; AAB92446 to CC AAB95893 represent human amino acid sequences; and AAH3362 to AAH33632 crepresent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of a comprise of the compression of the compression of the complex to the compression of the complex to the compression of the complex to 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary of a nolvnucleotide which comprises one of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; SEQ ID 3080; 2537pp +
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09-JUN-2000; 2000JP-0241899
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, Sugiyama T, Wakamatsu A, Nagai K,
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Database: Issued_Patents_NA:*
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Copyright (c) 1993-2000 Compugen
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-USER-US09750590_@CGN1_1_92 -NCPU-6 -ICPU-3 -LONGLOG
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MB. seq: US-09-065-474-39-
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Ratio: 1.000
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Patent No. 5744300
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TELEFAX: (213) 955-0440
TELEX: 67-3510
INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: N
TITLE OF INVENTION: I
TITLE OF INVENTION: C
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 32,327
REFERENCE/DOCKET NUMBER: 210
TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb storage
COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/2:
FILING DATE: April 29, 11
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: IBM P.C. DOS (Ver SOFTWARE: WordPerfect (Version 5.1) CURRENT APPLICATION DATA:
493 uSerGlu 495
                                                477 IleLysGlnLeuGluAspAlaLeuLysAspValGlnLysArgMetTyrGl
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Warburg, Richard
REGISTRATION NUMBER: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08 FILING DATE: October 31,
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STREET: 63
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GTCAGAA 59

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CURRENT APPLICATION NUMBER: US/08/841,349B
CURRENT PILING DATE: 1997-04-30
NUMBER OF SEQ ID NOS: 18
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 8176
TYPE: DNA
ORGANISM: Mus musculus
US-08-841-349-5
                                                                                                                                                                                             alignment_block:
US-09-750-590-2 x US-08-841-349-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block:
   Sequence 5, Application US/08841349B
   Patent No. 595594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
US-09-750-590-2 x US-08-841-349-3
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; LOCATION: (333)..(6794)
US-08-841-349-3
                      seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-822-028-26
                                                                                                                                                                                                                                                                                                                              alignment_scores:
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                                                                                                                                                                                                                                                        Quality: 9.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION: LOPA
APPLICANT: MISHRA, LOPA
TITLE OF INVENTION: GENES CODING PROTEINS FOR EARLY LIVER DEVELOPMENT. .
FILE REFERENCE: XX/P04470USO
FILE REFERENCE: XX/P04470USO
                                                                                                                                                     Align seg 1/1 to: US-08-841-349-5 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: US-08-841-349-3 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity: 100.000
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APPLICANT: MISHRA, LOPA
APPLICANT: MISHRA, LOPA
TITLE OF INVENTION: GENES CODING PROTEINS FOR EARLY LIVER DEVELOPMENT. .

FILE REFERENCE: XX/PO4470US0
CURRENT APPLICATION NUMBER: US/08/841,349B
CURRENT FILING DATE: 1997-04-30
NUMBER OF SEQ ID NOS: 18
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Patent No. 5955594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Mus musculus
                                                                 4869 AAAAACCAGACCCTCCAGAAAGAAATC 4895
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                                                                                        696 LysAsnGlnThrLeuGlnLysGluIle 704
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Gaps: 0
Percent Identity: 100.000
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APPLICANT:
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alignment_block:
US-09-750-590-2 x US-08-822-028-26/rev
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                                                                                                                                          seq_documentation_block:
                                                                                                                                                                          seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-08-479-285-26
                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
Quality:
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                    Sequence 26, Application US/08479285 Patent No. 6207815
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                                                                    GENERAL INFORMATION:
APPLICANT: MEZES, PETER S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                               1056 LysAspLeuLeuGlnLysTyrThr 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: ULMER, DUANE C
REGISTRATION NUMBER: 34,941
REFERENCE/DOCKET NUMBER: C-
TELECOMMUNICATION INFORMATION:
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APPLICANT:
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APPLICATION NUMBER: 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
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STATE: MICHIGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/822,028
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5. 5993813
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             816 base pairs
GOURLIE, BRIAN B
RIXON, MARK W
ANDERSON, WH KERR
KAPLAN, DONALD A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P.O. BOX 1967
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SCHOLOM, JEFFRED
ENTION: A NOVEL FAMILY OF HIGH AFFINITY,
JENTION: MODIFIED ANTIBODIES FOR CANCER TREATMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RIXON, MARK W
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D NO: 26:
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seq_documentation_block:
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US-09-750-590-2 x US-08-479-285-26/rev
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    Quality:
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; TOPOLOGY: lin
; MOLECULE TYPE:
US-08-479-285-26
                                                                                                                                                                                                                                                                                          seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-822-028-5
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                                                                                                                                                                                                                               Patent No. 5993813
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                                                                                                                                                                  APPLICANT: MEZES, PETER S
APPLICANT: GOURLIE, BRIAN
APPLICANT: RIXON, MARK W
                                                       NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/040687
FILING DATE: 31-MAR-1993
ATTORNEY/AGENT INFORMATION:
NAME: ULMER, DUANE C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                         TITLE OF INVENTION:
                                                                                                                                      APPLICANT:
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CURRENT APPLICATION DATA:
STREET: F.C.
STREET: F.C.
STREET: F.C.
STREET: F.C.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0 FILING DATE: 07-JUN-1995
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                                                                                                                                                                                                                 INFORMATION:
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MICHIGAN
                              P.O. BOX 1967
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                                                                                    SCHOLOM, JEFFREY
VENTION: A NOVEL FAMILY OF HIGH AFFINITY,
VENTION: MODIFIED ANTIBODIES FOR CANCER TREATMENT
                                                                                                                                     KAPLAN, DONALD A
                                                                                                                                                   ANDERSON, WH KERR
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                                           DUANE C
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O. BOX 1967
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                                             ULMER
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alignment_block:
US-09-750-590-2 x US-08-822-028-5/rev
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; Sequence 5, Applicatio
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                                                                                                                                                                                                                      GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (517) 636-1
                                                                                                                                                                                                                                                                                                                                               1056 LysAspLeuLeuGlnLysTyrThr 1063
                                                                                                                                                                                                                                        tent No.
                                                                                                                   APPLICANT: RIXON, MARK W
APPLICANT: ANDERSON, WH KERR
APPLICANT: KAPLAN, DONALD A
APPLICANT: SCHOLOM, JEFFREY
                          CORRESPONDENCE ADDRESS:
ADDRESSEE: DUANE C ULMER
STREET: P.O. BOX 1967
                                                                                                                                                                                                                                                                                                                                  818
                                                                                     TITLE OF INVENTION: A NOVEL FAMILY OF HIGH AFFINITY,
TITLE OF INVENTION: MODIFIED ANTIBODIES FOR CANCER TREATMENT
                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 862 base pairs
TYPE: nucleic acid
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TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: U
FILING DATE:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: ULMER, DUANE C
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
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                                                                          NUMBER OF SEQUENCES:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Roles-
STATE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POPOLOGY:
                                                                                                                                                                                                                                                                                                                                AAGGATCTTCTACAGAAATACACT 795
                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-08-479-285-5
                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48641-1967
                                                                                                                                                                                                                                     Application US/08479285 6207815
              MIDLAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
MICHIGAN
                                                                                                                                                                GOURLIE, BRIAN
RIXON, MARK W
                                                                                                                                                       ANDERSON, WH KERR
                                                                                                                                                                                                    MEZES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
520..862
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join(384..429,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.000
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                                                                                                                                                                                                    PETER S
                                                                                                                                                                                    BRIAN B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Identity: 100.000
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Gaps:
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COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk

COUNTRY:

RY: USA 48641-1967

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alignment_block:
US-09-750-590-2 x US-08-479-285-5/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/479,285
FILING DATE: 07-JUN-1995
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 08/040687
PILING DATE: 31-MAR-1993
ATTORNEY/AGENT INFORMATION:
NAME: ULMER, DUANE C
REGISTRATION NUMBER: 34,941
REFERENCE/DOCKET NUMBER: C-37,075C
TELECOMMUNICATION INFORMATION:
TELEPHONE: (517): 636-8104
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 862 base palis
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                        Sequence 40, Application US/09031485 Patent No. 5824306
                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Tang, Liang
APPLICANT: Blebm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1056 LysAspLeuLeuGlnLysTyrThr 1063
                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: Garol Talkington Verser,
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                     B18 AAGGATCTTCTACAGAAATACACT 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                     NUMBER OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
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                      COUNTRY:
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80525
                                          Colorado
                      USA
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520..862
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join(384..429, 509..519)
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seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-09-031-485-41
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 41, Application US/09031485 Patent No. 5824306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429
FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 9
SOFTWARE: Wordperfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
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OPERATING SYSTEM: Windows 95
SOFTWARE: Worderfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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LENGTH: 906 nucleotides
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                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: (CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                       ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins STATE: Colorado
                                                           APPLICATION NUMBER: US/09/031,485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                      CLASSIFICATION:
                                          FILING DATE:
                                                                                                                                                                                                               ZIP: 80525
                                                                                                                                                                                                                                 COUNTRY:
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Gaps: 0
Percent Identity: 100.000
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; MOLECULE TYPE: cDNA US-09-031-485-41
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                                                                                           COMPUTER: IBM PC Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429A
FILING DATE: 24-APR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 40, Application US/08847429A
Patent No. 5827692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 41:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                     TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Tang, Liang
APPLICANT: Blebm, E. Scot
APPLICANT: Blebm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: HW
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282 TTGCATTTAGCTGCTANATACGGC 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION: NAME: Verser, Carol Talk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 1825 Sharp Point Drive CITY: Fort Collins
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
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                        ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH:
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Ratio:
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nucleic acid
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                     906 nucleotides
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1.000
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alignment_block: US-09-750-590-2 x US-08-847-429A-40
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Quality:
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; TOPOLOGY: lin
; MOLECULE TYPE:
US-08-847-429A-40
alignment_block:
US-09-750-590-2 x US-08-847-429A-41/rev
                                                                                                                                                                                                                   alignment_scores:
Quality:
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                                                                                                                      Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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Ratio: 1.000 Gaps: 0
Percent Similarity: 100.000 Percent Identity: 100.000
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7772
TELEPHONE: 970/494-9505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 906 nucleotides
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APPLICATION NUMBER: US,
FILING DATE: 24-APR-199
CLASSIFICATION: 435
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
CAPALITY OF THE PROPERTY OF TH
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APPLICANT: Blebm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: 1. MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic acid
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linear
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                                                                                                                                   Percent Identity:
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seq_documentation_block:
   Sequence 41, Application US/09065474
   Patent No. 6063599
                                                                                                       seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-065-474-41
                                                                                                                                                                                                                                                                                                         alignment_block:
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                                                                                                                                                                                                                                                                                                                                                Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                  US-09-750-590-2 x US-09-065-474-40
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TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 40:
SEQUENCE CHARACTERISTICS:
LENGTH: 906 nuclectides
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-199B
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
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GENERAL INFORMATION:
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TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282 TTGCATTTAGCTGCTAAATACGGC 259
                                                                                                                                                  APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Carol Talkington Verser, ADDRESSEE: Heska Corporation STREET: 1025 Sharp Point Drive CITY: Fort Collins STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
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                                                                                                                                                                                                                                           to: US-09-065-474-40
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Blehm, E. Sc
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seq_documentation_block:
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Ratio: 1.000
Percent Similarity: 100.000
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Patent No. 5824306
GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
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OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
                                                                                                                                        APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
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LENGTH: 906 nucleotides
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                                                                                                  NUMBER OF SEQUENCES: {
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                 ADDRESSEE: Carol Talkington Verser,
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
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ADDRESSEE: Heska Corporation
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; LOCATION: US-09-031-485-37
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Ratio: 1.000
Percent Similarity: 100.000
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PRIOR APPLICATION DATA:
APPLICATION UMBER: US/08/847,429
EILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION UMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
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TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 37:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
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APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     625 TTGCATTTAGCTGCTAAATACGGC 648
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OPERATING SYSTEM: Windows 95
SOFTWARE: Wordperfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                              COUNTRY: U
ZIP: 80525
                                                                                                                                                                                                                                                                                                                                                                 CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE:
COMPUTER: II
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STRANDEDNESS: sing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/09031485
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alignment_block:
US-09-750-590-2 x US-09-031-485-39/rev
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
APPLICATION NUMBER: US/08/847,429A FILING DATE: 24-APR-1997 CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence
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TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA /
TITLE OF INVENTION: PROTEINS, NUC
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459 REFERENCE/DOCKET NUMBER: HW-5 TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US/08/847,429
PRICATION NUMBER: 24-APR-1997
PRICATION DATE: 24-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
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LENGTH: 908 nucleotides
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ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins STATE: Colorado
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FILING DATE:
CLASSIFICATION: 530
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                                                                                                                                                                                                                                                                                                                                       80525
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                                                                                                                                                                                                                                                                                                                                                         USA
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INFORMATION FOR SEQ ID NO:

37:

SEQUENCE CHARACTERISTICS: LENGTH: 908 nucleotides

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allgnment_block:
US-09-750-590-2 x US-08-847-429A-37
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; LOCATION: 1..906
US-08-847-429A-37
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Ratio: 1.000
Percent Similarity: 100.000
                                                                       NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 39:
SEQUENCE CHARACTERISTICS:
LENGTH: 908 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: US-08-847-429A-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 39, Application US/08847429A Patent No. 5827692
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: MordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THERBOF
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                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/847,429A FILING DATE: 24-APR-1997 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins
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                                     STRANDEDNESS:
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                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 80525
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                                     nucleic acid
EDNESS: single
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Gaps: 0
Percent Identity: 100.000
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alignment_scores:
Quality:
Ratio:
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US-09-750-590-2 x US-08-847-429A-39/rev
                   alignment_block:
                                                                                                       alignment_scores:
                                                                                                                                                          ; NAME/KEY:
; LOCATION:
US-09-065-474-37
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Ratio: 1.000
Percent Similarity: 100.000
                                           Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
US-09-750-590-2 x US-09-065-474-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to reverse of: US-08-847-429A-39
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, VCURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 970/493-72
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: ETITLE OF INVENTION: ETITLE OF INVENTION: UNBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
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LENGTH: 908 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                               MOLECULE TYPE:
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                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
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                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
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                                                                                                                                                                                                                                                                                nucleic acid
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E. Scot
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1..906
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                                                                                                                                                                                                                                                                                                                                        37:
                     8 Gaps: 0
Percent Identity: 100.000
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Align seg 1/1 to: US-09-065-474-37 from: 1 to: 908

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seq_documentation_block:
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US-09-750-590-2 x US-09-065-474-39/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-065-474-39
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Ratio: 1.000
Percent Similarity: 100.000
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Sequence 25, Application US/09031485
Patent No. 5824306
GENERAL INFORMATION:
APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No. GENERAL II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 39,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 39:
SEQUENCE CHARACTERISTICS:
LENGTH: 908 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: 1i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 80525
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                   284
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TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Tang, Lian
APPLICANT: Blehm, E.
                                                                                                                                                                                                                                      92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1825 Sharp Point Drive
CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: 24-APF CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Carol Talkington Verser, Ph.D ADDRESSEE: Heska Corporation
                                                                                                                                                                                               TTGCATTTAGCTGCTAAATACGGC 261
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6063599
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Gaps: 0
Percent Identity: 100.000
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alignment_block:
us-09-750-590-2 x us-09-031-485-25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                                                         Sequence 26, Application US/09031485 Patent No. 5824306
                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 970/484-9505 INFORMATION FOR SEQ ID NO:
                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Carol Talkington Verser,
ADDRESSEE: Heska Corporation
                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: HW
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/0
FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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                                                                                                                           NUMBER OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
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CITY: Fort Collins
STATE: Colorado
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COUNTRY:
                                      CITY:
                                                  STREET:
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                                  Fort Collins
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                 Colorado
                                                    1825 Sharp Point Drive
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Percent Identity:
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; STRANDEDNESS:
; TOPOLOGY: line
; MOLECULE TYPE: 0
US-09-031-485-26
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US-09-750-590-2 x US-09-031-485-26/rev
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 26:
SEQUENCE CHARACTERISTICS:
LENGTH: 909 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 25,
Patent No. !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTMARE: WordPorfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429A
FILING DATE: 24-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: WordPerfect for Windows, Version 7.0 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/031,485
                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/0 FILING DATE: 24-APR-1997 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                282 TTGCATTTAGCTGCTAAGTATGGC 259
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COMPUTER: IBM PC compatible
COPERATING SYSTEM: Windows 95
                                                                                                                                                                                    COUNTRY: USA
ZIP: 80525
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                      ADDRESSEE: Heska Corporation
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Ratio:
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alignment_block:
US-09-750-590-2 x US-08-847-429A-25
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TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                        TELEPHONE: 970/493-727
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429A
FILING DATE: 24-APR-1997
CLASSIFICATION: 435
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459 REFERENCE/DOCKET NUMBER: HW-5 TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
                                                                                                                                         REFERENCE/DOCKET NUMBER: HW
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      628 TTGCATTTAGCTGCTAAGTATGGC 651
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MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 1825 Sharp CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Carol Talkington Verser, Ph.D ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: sing
                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 80525
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STRANDEDNESS:
                                       ENGTH:
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o. 5827692
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               nucleic acid
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alignment_block:
US-09-750-590-2 x US-08-847-429A-26/rev
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                             alignment_block:
US-09-750-590-2 x US-09-065-474-25
                                                                                                                                                                                                ; TOPOLOGY: 1; MOLECULE TYPE: US-09-065-474-25
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                       Percent Similarity:
Align seg 1/1 to: US-09-065-474-25 from: 1
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                                                                                                                                                                                                                                                                                                                           TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
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equence 25, Applicati
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                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 909 nucleotides
                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: Wordberfect for Windows,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 24-APF CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 1825 Sharp
CITY: Fort Collins
                                                                                                                                                                                                                                                      STRANDEDNESS:
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ADDRESSEE: Heska Corporation
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                                                                                                                           Quality:
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6063599
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                                                                                                            Ratio:
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171
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                                                                                  Length: 8
Gaps: 0
Percent Identity: 100.000
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alignment_block:
US-09-750-590-2 x US-09-065-474-26/rev
                                                       seq_documentation_block:
                                                                                      seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-09-031-485-22
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                                                                                                                                                                                                     Align seg 1/1
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Percent Similarity:
                   Sequence 22, Patent No. 5
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TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
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GENERAL INFORMATION:
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SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
                                                                                                                            282 TTGCATTTAGCTGCTAAGTATGGC 259
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LENGTH: 909 nucleotides
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NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-0
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TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Tang, Liam APPLICANT: Blehm, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92 LeuHisLeuAlaAlaLysTyrGly 99
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
CLASSIFICATION:
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STATE: Colorado
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6063599
                     5824306
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                                  Application US/09031485
                                                                                                                                                                                                     to reverse of: US-09-065-474-26
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seq_documentation_block:
; Sequence 24, Applicat1;
; Patent No. 5824306
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; LOCATION:
US-09-031-485-22
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Ratio: 1.000
Percent Similarity: 100.000
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                       APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429
FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: Windows 95 SOFTWARE: WordPerfect for Windows, CURRENT APPLICATION DATA:
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TITLE OF INVENTION:
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STATE: Colorado
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        ADDRESSEE:
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5824306
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Carol Talkington Verser, Ph.D. Heska Corporation
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alignment_block:
US-09-750-590-2 x US-09-031-485-24/rev
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Ratio: 1.000
Percent Similarity: 100.000
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 9:
                                                                                                                                                                                                                                                                         APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: Floppy disk
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ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 530 PRIOR APPLICATION DATA:
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                                                                                                                                            STREET: 1825 Sharp
CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                ADDRESSEE: Carol Talkington Verser, Ph.D
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
                                                                                                                       COUNTRY:
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                                                                                                                           USA
SYSTEM: Windows 95 WordPerfect for Windows, Version 7.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HW-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1 to: 911
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CURRENT APPLICATION DATA: APPLICATION NUMBER: US

FILING DATE: 24 CLASSIFICATION:

24-APR-1997

US/08/847,429A

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alignment_block:
US-09-750-590-2 x US-08-847-429A-22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 970/484-9505 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                ZIP: 80525

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 911 nucleotides
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NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OLECULE TYPE: CDNA
                                                                                                                                            APPLICATION NUMBER: US/08/847,429A FILING DATE: 24-APR-1997
                                                                                                                                                                                                                                                                                                                                                        CITY: Fort Collins
STATE: Colorado
                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive
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LOCATION: 1...
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                                                                                                                                                                                                                                                                                                                                                 Colorado
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Blehm, E. S
                                                                                                                                                                                                                                                                                                                                USA
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                                                                                                                                     24-APR-1997
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                                                                                                                                                                                                       Version
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US-09-065-474-22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
FILING DATE: 24-APR-1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                              TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Tang, Liang
APPLICANT: Blebm, E. Scot
APPLICANT: Blebm, E. Scot
TITLE OF INVENTION: DIROFFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 171
CORRESPONDENCE ADDRESS:
                                                                           TOPOLOGY: 1
MOLECULE TYPE:
                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 911 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     284 TTGCATTTAGCTGCTAAGTATGGC 261
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 1825 Sharp Point Drive CITY: Fort Collins
                                                                                                                                  TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation
                                   NAME/KEY: CDS
                                                                                                               STRANDEDNESS:
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1.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                            Version 7.0
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TOPOLOGY: 11;

MOLECULE TYPE:
US-09-065-474-24
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US-09-750-590-2 x US-09-065-474-22
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                                                                                                      allgnment_block:
US-09-750-590-2 x US-09-065-474-24/rev
                                                                                                                                                                                                                                 alignment_scores:
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                                                                                                                                                                  Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                Align seg 1/1 to reverse of: US-09-065-474-24
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Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
LENGTH: 911 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: HW
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, TITLE OF INVENTION: USES THEREOF. NUMBER OF SEQUENCES: 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             628 TTGCATTTAGCTGCTAAGTATGGC 651
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92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
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ZIP: 80525
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                                                                                                                                                                     Percent Identity:
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alignment_block:
US-09-750-590-2 x US-09-065-474-138
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                                                                                                   seq_documentation_block:
                                                                                                                                        seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-065-474-140
                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
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US-09-065-474-138
                                                                                                                                                                                                                                                                                                                                                           Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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GENERAL INFORMATION:
                                                           Sequence 140, Application US/09065474 Patent No. 6063599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 138, Application US/09065474 Patent No. 6063599
GENERAL INFORMATION:
APPLICANT: Tang,
APPLICANT: Blehm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Tang, Liang
APPLICANT: Blebm, E. Scot
TITLE OF INVENTION: DIROFIL
TITLE OF INVENTION: PROTEIN
TITLE OF INVENTION: USES TH
NUMBER OF SEQUENCES: 171
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 24 APR-1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
                                                                                                                                                                                     340 TIGCATTIAGCIGCTAAGTATGGC 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                        92 LeuHisLeuAlaAlaLysTyrGly 99
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CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 80525
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Heska Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1056 nucleotides TYPE: nucleic acid
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Tang, Liang
Blehm, E. Scot
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                                                                                                                                                                                                                                                                                                                                                         Length: 8
Gaps: 0
Percent Identity: 100.000
                                                                                                                                                                                                                                                                     from: 1
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; TOPOLOGY: 1i
; MOLECULE TYPE:
US-09-065-474-140
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US-09-750-590-2 x US-09-065-474-140/rev
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Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to reverse of: US-09-065-474-140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/08981729 Patent No. 6177261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 140:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _documentation_block:
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OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,474
FILING DATE: 24-APR-1998
CLASSIFICATION:
NFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5-C
TELECOMMUNICATION. INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 1
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TITLE OF INVENTION:
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LENGTH: 1056 nucleotides
                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPUTER: CO
                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/981,729
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: A novel method to isolate mutants and TITLE OF INVENTION: clone the complementing gene NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    717
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ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: single
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Percent Identity: 100.000
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; NAME/KEY:
; LOCATION:
US-08-981-729-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-750-590-2 x US-08-981-729-5/rev
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Quality:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                                                                                                                          Sequence 1, Application US/07842349 Patent No. 5358864
                                                                                                                                                                                                                                                             GENERAL INFORMATION
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NAME/KEY:
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                                                                                                                                                               APPLICANT: DE GRAAFF, LEENU
APPLICANT: HILLE R., JAN D.
APPLICANT: VAN OOYEN J., AL
APPLICANT: VISSER, JACOB
APPLICANT: HARDER, ABRAHAM
                                                                                                                                                                                                                                                                                                                                                                                   939 SerGlnGluGluIleValThrLeu 946
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                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                      NUMBER OF SEQUENCES:
COMPUTER READABLE FORM
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LOCATION:
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LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: double
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION:
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                                           CITY: Palo Alto
STATE: California
                                                             ADDRESSEE: MUKRALOW... STREET: 755 Page Mill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                            COUNTRY:
                 94304-1018
                                USA
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1229..1631
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1179..1228
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950..1179
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848..854
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950..1031
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1031..1631
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                                                                                                                                     CLONING AND EXPRESSION OF XYLANASE GNEES FROM FUNGAL ORIGIN
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/product= "1.4-beta-xylanxylanohydrolase"
/gene= "xila"
/standard_name= "endo-xylanase"
                                                                                           & FOERSTER
                                                                                                                                                                                                                                LEENDERT H.
                                                                                                                                                                                                  , ALBERT J.
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Gaps: 0
Percent Identity: 100.000
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REGISTRATION NUMBER:

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seq_documentation_block:
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US-09-750-590-2 x US-07-842-349-1/rev
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TELEFAX: (415).
TELEX: 706141
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2055 base pairs
TYPE: NUCLEIC ACID
TYPE: NUCLEIC ACID
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US-07-842-349-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Application US/07781034 Patent No. 5442050
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APPLICANT: Fishma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: MURASHIGE, KATE H.
REGISTRATION NUMBER: 29,959
REFERRACE/DOCKET NUMBER: 2461
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 813-5600
TELEPAX: (415) 494-0792
TELEPAX: (415) 494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1637 TCTCAAGAAGAGATTGTGACACTA 1614
                                                           SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/781,034
FILING DATE: 19911018
FILING CASSIFICATION: 424
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IHM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                          APPLICANT: Fishman, Jay A.
TITLE OF INVENTION: Molecular Cloning of Antigens Shared By
TITLE OF INVENTION: Rat- and Human-Derived Pneumocystis Carinii
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          939 SerGlnGluGluIleValThrLeu 946
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NAME: MURASHIGE, KATE H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                    STATE: Massachusetts
                                                                                                                                                                                                                                                                                                     ADDRESSEE: Hamilton, Brook, Smith & Reynolds, P.C. STREET: Two Militia Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
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Ratio:
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                                                                                                                                                                                                                                                                                         Lexington
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join(950..1180, 1231..1632)
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1031
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Percent Identity: 100.000
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alignment_block:
US-09-750-590-2 x US-07-781-034-1
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; LOCATION:
US-07-781-034-1
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Ratio: 1.000
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: US-07-781-034-1 from: 1
PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/781,034

FILING DATE: 18-OCT-1991

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/768,166

FILING DATE: 30-SEP-1991

ATTORNEY/AGENT INFORMATION:

NAME: Granahan, Patricia

REGISTRATION NUMBER: 32,227

REFERENCE/DOCKET NUMBER: MGH91-02AA PCT

TELECOMMUNICATION INFORMATION:

TELEPHONE: (617) 861-6240

TELEPAX: (617) 861-9540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application PC/TUS9208328 GENERAL INFORMATION:
APPLICANT: F1shman, Jay A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2773 ATTTTGACGTTACAGAAAGATTTA 2796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1020 IleLeuThrLeuGlnLysAspLeu 1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (617) 861-9540 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 2814 base pairs
                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: 1:
                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: Law CITY: Lexington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLAGE: CD
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HYPOTHETICAL: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (617) 861-6240
                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                 APPLICATION NUMBER: POFILING DATE: 19920930
                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: MG
                                                                                                                                                                                                                                                                                                                                                                                           02173
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fishman,
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1617..2813
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                                                                                                                                                                                                                                                                   PCT/US92/08328
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Gaps: 0
Percent Identity: 100.000
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INFORMATION FOR SEQ ID NO:

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alignment_block:
US-09-750-590-2 x PCT-US92-08328-1
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Quality:
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; LOCATION:
PCT-US92-08328-1
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Percent Similarity: 100.000
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                                                                               FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPAX: 970/493-7272
TELEFAX: 970/494-9505
                                                                         TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1020 IleLeuThrLeuGlnLysAspLeu 1027
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 2814 base pair
                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Tang, Llang
APPLICANT: Blehn, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
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                             SEQUENCE CHARACTERISTICS:
LENGTH: 5235 nucleotides
                                                                                                                                                                                                                                                        FILING DATE:
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heaka Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 80525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/847,429 FILING DATE: 24-APR-1997
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUCLEIC ACID
               nucleic acid
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1617..2813
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                                                                         35:
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alignment_scores:
Quality:
Ratio:
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US-09-750-590-2 x US-09-031-485-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-09-031-485-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
                                                                                                               ; MOLECULE TYPE: US-09-031-485-36
                                                         alignment_scores:
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Ratio: 1.000
Percent Similarity: 100.000
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Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429
FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Tang, Lian APPLICANT: Blehm, E.
                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 5235 nucleotid
                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELLEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1825 Sharp Point Drive
CITY: Fort Collins
STATE: Colorado
                                                                                                                                                      STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                 NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation
                                                                                                                                                                                                                                                                                        TELEPHONE:
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                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                               5235 nucleotides
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Gaps:
                                          Length:
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to:
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Percent Identity: 100.000

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seq_documentation_block:
    Sequence 36, Application US/08847429A
                                                      seq_name: /cgn2_6/ptodata/2/1na/5A_COMB.seq:US-08-847-429A-36
                                                                                                                                                                                                                                                         alignment_block:
                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                              US-09-750-590-2 x US-08-847-429A-35
                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: US-08-847-429A-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECUMPACE 970/484-9505
TELEFAX: 970/484-9505
INFORMATION FOR SEO ID NO: 35:
SEQUENCE CHARACTERISTICS:
LENGTH: 5235 nucleotides
                                                                                                                                                                                         Align seg 1/1 to: US-08-847-429A-35
                                                                                                                                                                                                                                                                                              Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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; Sequence 35, Applicati
; Patent No. 5827692
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US-09-750-590-2 x US-09-031-485-36/rev
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                                                                                                      1645 TTGCATTTAGCTGCTAAGTATGGC 1668
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: HW. TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Tang, Liang
APPLICANT: Blehm, E. SCOT
APPLICANT: Blehm, E. SCOT
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3591 TTGCATTTAGCTGCTAAGTATGGC 3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/0
FILING DATE: 24-APR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                              92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92 LeuHisLeuAlaAlaLysTyrGly 99
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TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: Colored
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                      Quality:
Ratio:
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                                                                                                                                                                                                                                                                                       Length: 8
Gaps: 0
Percent Identity: 100.000
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                                                                                                                                                                                       from:
                                                                                                                                                                                       to: 5235
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seq_documentation_block:
    Sequence 35, Applicati
    Patent No. 6063599
                                                                                                                                                                                                                                                                                                                                                     seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-065-474-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: 11;

MOLECULE TYPE:
US-08-847-429A-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to reverse of: US-08-847-429A-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-590-2 x US-08-847-429A-36/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity: 100.000
                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5827692
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 171
CORRESPONDENCE ADDRESS:
ADDRESSEE: Carol Talkington Verser, Ph.D.
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                     3591 TTGCATTTAGCTGCTAAGTATGGC 3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/847,429A
FILING DATE: 24-APR-1997
                                                                                                                                                                                               APPLICANT: Tang, Liang APPLICANT: Blehm, E. S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 5235 nucleotides
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                                                                                                                                                                                                                                                                                                                                                                                                                            92 LeuHisLeuAlaAlaLysTyrGly 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                         5, Application US/09065474 6063599
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1.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from: 1
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alignment_block:
US-09-750-590-2 x US-09-065-474-35
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Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-065-474-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to: US-09-065-474-35 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 36, Application US/09065474 Patent No. 6063599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO: 35:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Tang, Liang
APPLICANT: Blehm, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 171
CORRESPONDENCES: 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459 REFERENCE/DOCKET NUMBER: HW-5-C TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: cDNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 9
SOFTWARE: Wordperfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                            JAKET: 1825 Sharp Point Drive CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09 FILING DATE: 24-APR-1998 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
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                                   APPLICATION NUMBER: US/0 FILING DATE: 24-APR-1998
                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                            ADDRESSEE: Carol Talkington Verser, Ph.D ADDRESSEE: Heska Corporation
                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                             80525
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                                                        US/09/065,474
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Gaps: 0
Percent Identity: 100.000
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alignment_block: us-09-065-474-36/rev
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; MOLECULE TYPE:
US-09-065-474-36
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Ratio: 1.000
Percent Similarity: 100.000
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      ATTORNEY AGENT 1NFORMATION:

NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
TELEFAX: 970/484-9505
INFORMATION FOR SEO ID NO: 32:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 970/484-9505 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3591 TTGCATTTAGCTGCTAAGTATGGC 3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459 REFERENCE/DOCKET NUMBER: HW-5-C1 TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272 TELEPAX: 970/484-9505
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LENGTH: 5235 nucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Tang, Liang
APPLICANT: Blehm, E. SCOt
APPLICANT: Blehm, E. SCOt
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES,
TITLE OF INVENTION: USES THEREOF
NUMBER OF SEQUENCES: 85
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                       CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US/08/847,429
FILING DATE: 24-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92 LeuHisLeuAlaAlaLysTyrGly 99
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CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive
                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
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5503 nucleotides
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STRANDEDNESS:
TOPOLOGY: line
MOLECULE TYPE: CUS-09-031-485-34
                                                                 COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/031,485
FILING DATE:
CLASSIFICATION APPLICATION DATA
APPLICATION NUMBER: US/08/847,429
FILING DATE: 24-APR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: HW-5
TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/484-9505
INFORMATION FOR SEQ ID NO: 34:
SEQUENCE CHARACTERISTICS:
LENGTH: 5503 nucleotides
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_name: /cgn2_6/ptodata/2/ina/5A_cOMB.seq:US-09-031-485-34
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US-09-750-590-2 x US-09-031-485-32
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Quality: 8.00
Ratio: 1.000
Percent Similarity: 100.000
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; LOCATION:
US-09-031-485-32
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Patent No. 5824306
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Tang, Liang
APPLICANT: Blehn, E. Scot
TITLE OF INVENTION: DIROFILARIA AND BRUGIA ANKYRIN
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: I
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Carol Talkington Verser, Ph.D.
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: UZIP: 80525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
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51..5285
                                                       single
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Gaps: 0
Percent Identity: 100.000
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alignment\_scores:

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9b_est2:BG540419
9b_est1:AH368631
9b_est1:AH561529
9b_est1:AH561529
9b_est1:AH561529
9b_est1:AH561933
9b_est1:AH764036
9b_est1:AH764036
9b_est1:AH764036
9b_est1:AH764036
9b_est1:BF011923
9b_est1:BF011923
9b_est2:BF462851
9b_est2:BF462851
9b_est2:BF298456
9b_est2:BE38456646433
9b_est2:BF32070
9b_est2:BF722070
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gb_est1:AV692878
gb_est2:BG253578
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Query length: 1401
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gb_est2:H45100
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gb_est1:AW478133
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Database length: 1077921985
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-Q-/cgn2_1/USPTO_spool/US09750590/runat_10042002_145524_11863/app_query.fasta_1.1480
-Q-/cgn2_1/USPTO_spool/US09750590/runat_10042002_145524_11863/app_query.fasta_1.1480
-DB-EST -OEMT-fastab -SUFFIX-ol.rst -GAPOP-4.500 -GAPEXT-0.050
-MINMATCH-0.100 -LOOPCL-0.000 -LOOPEXT-0.000 -GAPOP-6.000
-QGAPEXT-0.000 -VGAPOP-60.000 -XGAPEXT-60.000 -FARDOP-6.000
-GAPEXT-7.000 -YGAPOP-60.000 -XGAPEXT-60.000 -DELOP-6.000
-DELEXT-7.000 -START-1 -MATRIX-Oligo -TRANS-human40.cdi -LIST-45
-DOCALIGN-200 -THR_SCORE-quality -THR_MIN-1 -ALIGN-45
-MODE-LOCAL -OUTEMT-P1S -NORM-ext -HARRIZE-500 -MINLEN-0
-MAXLEN-200000000 -USER-US09750590_eCGN1_1.4609 -NCPU-6
-ICPU-3 -LONGLOG -DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -NO_XLPXY
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1 AW4786482 60686 MARC 2BOV BOS t

1 AW4786483 18665 MARC 2PIG SUS SUS

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1 BF574189 602131348F1 NH, MGC_81

1 BE350494 ht14e12.x1 NCI_CGAP_K1

1 AV692878 AV692878 GCK CHOMO Sapi,

1 GC253578 602354324F1 NH, MGC_90

1 A329627 EST33284 Embryo, 12 wd

1 H5100 yo66a03:r1 Soares breast

1 GC540419 6022588731F1 NH, MGC_86

1 H5100 yo66a03:r1 Soares thyr

1 BF966001 602277187F2 NH_MGC_86

1 AW326301 18677 MARC 2PIG SUS SC

1 AL561529 vx78c09.x1 Soares thyr

1 EF416703 UI-R-CN0-bkz-d-06-0-UI

1 AA684631 EST104976 Rat PC-12 cc

1 B1276339 UI-R-CW0-bwp-a-05-0-UI

1 A1501930 UI-R-CV0-bwp-a-05-0-UI

1 A1501930 UI-R-Y0-acr-g-05-0-UI

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11764036 UI-R-Y0-acyb-03-0-UI

W29292 mc19al2.rl Soares mouse

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AA153070 url R-CG0p-bgn-e-01-0-U

BE5984856 UI-M-CG0p-bgn-e-06-0-U

BE632023 uull0002.y2 Soares_mann

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BI274494 UI-R-CW0-bwj-e-06-0-U

BF121534 602965128F1 NCI_CGAP_M

AA869540 vq09c07.rl Barstead st

AA869540 vq09c07.rl Barstead st

AA869540 vq09c07.rl Barstead st

AA6012454 Mus musculus II days

AA869540 vq09c07.rl Barstead st

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BF148472 uy8le10.xl NCI_CGAP_M
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gb_est2:BF161191
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1069 LysGluLysLeuValGluGluAsnAlaLysGlnThrSerGluIleLeuAl 1085
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4390
Email: smith@email.marc.usda.gov
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21180013
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AW670523
                                                                                                                                                                                                                                                                                                                                                                                                                FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 112 row: I column: 24
Seg primer: ATTTAGCTGACACTATAG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
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1 (bases 1 to 476)
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/db_xref-"taxon:9913"
/clone_lib-"MARC 1BOV"
/tissue_type-"pooled"
/lab_host-"DH10B"
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BI156388 602919646F1 NIH_CGA
I AA840271 vv990a10.r1 Stratage
I AA499973 v906612.r1 Soares
I BF147659 us37f02.x1 Soares
BF161191 601769451F1 NCI_CGA
I R58050 F9035 Fetal heart Ho
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AW426482 GI:6954429
EST.
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                                                                                     USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA Tel: 402 762 4366 Fax: 402 762 4390 Email: smithemail.marc.usda.gov Single pass sequencing. Bases called and trimmed with phred v0.980904.e. Vector identified by cross_match with the -mins and -minmatch 12 options.
       Seq
                                                                                                                                                                                                                                                            Sequence evaluation of four pooled-tissue normalized bovine libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 372)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and Color, Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
                          BACKWARD: GTTTTCCCAGTCACGACG Plate: 29 row: I column: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                            FORWARD: AGGAAACAGCTATGACCAT
                                                                          PCR PRimers
                                                                                                                                                                                                                                 Contact: Smith TPL
                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                     21180013
                                                                                                                                                                                                                                                                                                                       Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae; Bos.
       primer:
                        row:
row: I column: 3
ATTTAGGTGACACTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72 bp mRN
Bos taurus
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                                                                                                          -minscore
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KEYWORDS
SOURCE
ORGANISM
                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                        seq_documentation_block:
LOCUS AW478133
DEFINITION 18665 MARC 2
                                                                                                                                                                                                           seq_name: gb_est1:AW478133
                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
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ORIGIN
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  TITLE
                                        AUTHORS
                                                                                                                                                                                                                                                                                       316
                                                                                                                                                                                                                                                                                                                                                                  849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366
                                                                                                                                                                                                                                                              882
                                                                                                                                                                                                                                                                                                    866 LeuValAspValLysLysLysCysGluAspIleAsnGlnGluPheValLy
                                                                                                                                                                                                                                                                                                                                           266
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              782 uGluThrValPheIleProProGluArgHisGluLysGluMetMetAlaL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                       sileLys 884
                                                                                                                                                                                                                                                                                       TTAGTAGATGTGAAGAAGAAGTGTGAAGATATAAATCAAGAATTTGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAATCCAATATCACTGAACTTAAGAAGCAGCTGTCTGAACTTAATAAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity: 100.000
                                                                                                                                                                                                                                      AATAAAA 372
                                                                                       pig.
Sus scrofa
                                                                                                                  AW478133
AW478133.1
EST.
                      1 (bases 1 to 399)
Fahrenkrug, S.C., Freking, B.A., Rohrer, G.A., Smith, T.P.L., Stone, R.T., Heaton, M.P., Grosse, W.M., Bennett, G.A., Laegre
                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                          18665 MARC 2PIG
Design and use of two pooled tissue normalized cDNA libraries for
                and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_ltb="MARC 4BOV"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Vector: pCMV SPORT6; Site
Library made from pooled tissue
embryos." 9 g 85 t
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                                                                                                                                 GI:7048239
                                                                                                                                                                     399 bp
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                                                                                                                                                          scrofa
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Gaps:
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                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Site_1: XbaI; Site_2: XhoI;
ssue from day 20 and day 40
                                                                                                                                                          sequence
                                                                                                                                                                                                                                                                                                                                                                  865
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                                                                                                                                                                      09-JUL-2000
                         Laegreld, W.W.
                                                               Euteleostomi;
Sus.
                                       Casas, E.,
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ACCESSION
VERSION
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US-09-750-590-2 x AW478133
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ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
                                                                                                                                                                seq_documentation_block:
LOCUS BF574189
                                                                        KEYWORDS
                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality: 80.00
Ratio: 1.000
Percent Similarity: 100.000
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                                      ORGANISM
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                                                                                                                                                                                                                                                                                                                                                                   1276
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                                                                                                                                                                                                                                                                                                                             luLeuLeuHisPheSerIleGluGlnGluIleLysAspGlnGlnGluArg 1275
                                                                                                                                                                                                                                                                           uSerAlaLysGlnIleGluAlaLysAspAsnLysIleThr 1305
                                                                                                                                                                                                                                                          ATCCGCCAAACAATTGAAGCGAAAGATAATAAGATAACT 397
                                                                                                                                                                                                                    gb_est2:BF574189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: smith@email.marc.usda.gov
Single pass sequencing. Bases called and trimmed with phred
v0.980904.e. Vector identified by cross_match with the -min
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Smith TPL
USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                    Homo sapiens
                                                       human
                                                                                           BF574189.1
                                                                                                           mRNA sequence.
BF574189
                                                                                                                                             Plate: 10 row: L column: 2
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
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Fax: 402 762 4390
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from testis, ovary, endometrium, hypothalamus, pituitary, and placenta." ed c c 89 g 77 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Sus scrofa"
/db_xref="taxon:9823"
/clone_lib="MARC 2PIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="pooled"
/lab_host="DH10B"
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                                                                                           GI:11647901
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Gaps: 0
Percent Identity: 100.000
 Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                 CDNA
                                                                                                                                                 clone IMAGE: 4271074 5',
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JOURNAL
COMMENT
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AUTHORS
TITLE
                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                 seq_documentation_block:
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US-09-750-590-2 x BF574189
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                                                                                                                                                                                                                                                                                                                                              seq_name: gb_est1:BE350494
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                                                                                                                                                                                                DEFINITION
SOURCE
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         484 euLysAspValGlnLysArgMetTyrGluSerGluGlyLysValLysGln
                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGACCCATTTTCTTGCCCTTAAAGAACACTTAACAAGT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MetGlnThrHisPheLeuAlaLeuLysGluHisLeuThrSer 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAAGATGTGCAGAAGAGGATGTATGAGTCAGAAGGTAAAGTTAAACAA
                                                                                                        BE350494 468 bp mRNA EST 18-JUL-2000 htl4e12.x1 NCI_CGAP_Kid13 Homo sapiens cDNA clone IMAGE:3146734 3'similar to TR:Q28282 Q28282 C3VS PROTEIN. ;, mRNA securioria BE350494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLCM1082 row: o column: 11
High quality sequence stop: 559.
Location/Qualifiers
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Tissue Procurement: CLONETECH Laboratories, Inc.
cDNA Library Preparation: CLONETECH Laboratories, I
cDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                     EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                               BE350494.1
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5'-ATTCTAGAGGCCGAGGCGGCCGACATG-dT(30)BN-3' (where B = A, C, O, OT B). Average insert size c, or G and N = A, C, G, or T). Average insert size 1.55 kb (range 1.0-4.0 kb). 15/15 colonles contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
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/clone=1b="NIH_MGC_81"
/lab_host="DH10B (T1 phage-resistant)"
/lab_host="DH10B (T1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from: 1
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seq_name: gb_est1:AV692878
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US-09-750-590-2 x BE350494/rev
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Quality:
                          SOURCE
ORGANISM
                                                                                                                                                               seq_documentation_block:
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AUTHORS
TITLE
                                                                 KEYWORDS
                                                                                       VERSION
                                                                                                        ACCESSION
                                                                                                                            DEFINITION
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ORIGIN
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                      Y8ArgMetTyrGluSerGluGlyLy8ValLy8GlnMetGlnThrHisPhe 505
                                                                                                                                                                                                                                                                                                                                                                                                                    pSerAspGluGlnIleLysGlnLeuGluAspAlaLeuLysAspValGlnL 489
                                                                                                                                                                                                                                                                                                                                                                                              TTCAGATGAACAGATAAAGCAATTAGAAGATGCATTAAAAGATGTGCAGA 300
                                                                                                                                                                                                                                                                                                                    AGAGGATGTATGAGTCAGAAGGTAAAGTTAAACAAATGCAGACCCATTTT
                                                                                             AV692878 GKC Homo sapiens cDNA
AV692878 GKC Homo sapiens cDNA
      Eukaryota;
                          Homo sapiens
                                              human.
                                                                               AV692878.1 GI:10294741
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Seq primer: -40UP from Gibco
High quality sequence stop: 386.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome Sequencing Center Clone distribution information can found through the I.M.A.G.E. Consortium/LLNL, send email to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tissue Procurement: Chris Moskaluk, M.D., Ph.D., Michael R. Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: Christa Prange, The I.M.A.G.E. Consortium DNA Sequencing by: Washington University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tumor Gene Index
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National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 468)
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/clone="JMAGE:3146734"
/clone_lib="NCI_CGAP_K1d13"
/tlssue_type="2 pooled Wilms' t
metastatic to brain"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: kidney; Vector: pCMV-SPORT6; Site_1: Sal
Site_2: Not1; Cloned unidirectionally. Primer: Oligo
Library constructed by Life Technologies."
a 122 c 68 g 189 t
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Metazoa; Chordata; Craniata; Vertebrata;
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Euteleostomi;
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REFERENCE
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ORGANISM
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LOCUS BG253578
                                                                                                                                                                                                                                                                      seq_name: gb_est2:BG253578
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US-09-750-590-2 x AV692878
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                          GATCTGGAAAGCGAG 463
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutherla; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 883)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                           602364324F1 NIH_MGC_90 Homo sapiens cDNA
                                                                                            Homo sapiens
                                                                                                                                 EST
                                                                                                                                                                  mRNA sequence.
BG253578
                                                                                                                human
                                                                                                                                               BG253578.1 GI:12763394
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Unpublished (2000)
Contact: Reguang Han
Chinese National Human Genome Center at Shanghai
S51 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 705)

Mu,T., Qian,B., Huang,Q., Huang,C., Kang,B., Gao,X., Xu,Z., Xiao,
Xu,X., Li,N., Peng,Y., Liu,F., Qu,J., Song,H., Cheng,Z., Zeng,
Xu,S., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong,M., Lu,G., Yan,
Xu,S., Gu,Y., Chen,Z. and Han,Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: hanzg@chgc.sh.cn
This clone is available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201203, P. R. China
Tel: 86-21-50801919(ex.45)
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/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone-"GKCCYD05"
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Gaps: 0
Percent Identity: 100,000
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US-09-750-590-2 x BG253578
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LOCUS AA329627
                                                                                                                                                                                                           SOURCE
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AspLeuGluSerGlu 331
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Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                  AA329627 373 bp mRNA EST 20-Apr.1997
EST33284 Embryo, 12 week II Homo sapiens cDNA 5' end similar to
similar to myosin heavy chain family, mRNA sequence.
AA329627
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Location/Qualifiers
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Plate: LLAM10293 row: p column: 05
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 373)

Adams,M.D., Kerlavage,A.R., Fleischmann,R.D., Fuldner,R.A., Bult,C.J., Lee,N.H., Kirkness,E.F., Weinstock,K.G., Gocayne,J.D., White,O., Sutton,G., Blake,J.A., Brandon,R.C., Man-Wai,C., Clayton,R.A., Cline,T.R., Cotton,M.D., Earle-Hughes,J., Fine,L.D., Fitzgerald
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cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                               AA329627.1 GI:1981890
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/tissue_type="ademocarcinoma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: NotI;
/note="Organ: liver; Vector: pCMY-SPORT6; Site_1: NotI;
/note="Organ: liver; Vector: pCMY-SPORT6; Site_1: NotI;
/note="organ: liver; Vector: pCMY-SPORT6; Site_1: NotI;
/note: this is a NIH_MGC Library."

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/clone="IMAGE:4472692"
/clone_lib="NIH_MGC_90"
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Gaps: 0
Percent Identity: 100.000
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US-09-750-590-2 x AA329627
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                                                     seq_documentation_block:
LOCUS H45100
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H45100 485 bp mRNA EST 31-JUL-1995
yo66a05.r1 Soares breast 3NbHBst Homo sapiens cDNA clone
IMAGE:182864 5', mRNA sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Kerlavage, AR
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/ob_xref-"ATCC (inhost):131302"
/db_xref-"taxon:9606"
/db_xref-"taxon:9606"
/clone_11b-"Embryo, 12 week II"
/clov_stage-"embryo, 12 wks"
/note-"Vector: pBluescript SK-; Site_1: EcoRI; Site_2:
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                                                                                     1290 eGlnGluSerAiaLysGlnIleGluAlaLysAspAsnLysIleThrGluL 1307
                1307 euLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSerGln 1323
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                                                                                                                                         81 GAACGATGTGATAAGTCCTTAACAACAATCACAGAGTTACAAAGAAGAAT 130
TGCTTAATGATGTGGAAAGATTAAAACAGGCACTCAATGGCCTTTCCCAA
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                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: est@watson.wustl.edu
Insert Size: 645
High quality sequence stops: 338
Source: IMAGE Consortium, LLNL
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 645
Std Error: 0.00
Seq.primer: M13RP1
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The WashU-Merck EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence stop: 338
Location/Qualifiers
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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/clone="IMAGE:182864"
/clone_lib="Soares breast 3NbHBst"
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1307 euLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSerGln 1323
                                                                         135 ACAAGAATCTGCTAAACAAATAGAAGCAAAAGATAATAAGATAACTGAAC 184
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH Laboratories, Inc
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Contact: Robert Strausberg, Ph.D.
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National Institutes of Health, Mammalian Gene Collection (MGC)
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/Clone_Tib="NIH_MGC_77*
/Tab_most="bm10B (T1 phage-resistant)*
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KEYWORDS
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ORIGIN
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US-09-750-590-2 x BF966001
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LOCUS BF966001
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                ACAAGAATCTGCTAAACAAATAGAAGCAAAAGATAATAAGATAACTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAMJ10013 row: m column: 21
High quality sequence stop: 730.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 803)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY 55001 803 bp mRN/
602277187F2 NIH_MGC_86 Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="osteosarcoma, cell line"
/lab_host="DHIOB (phage=resistant)"
/note="Organ: bone; Vector: pcMv-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.53 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NHH_MGC Library."
a 145 c 178 g 168 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4365116"
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Gaps: 0
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LOCUS AW326301
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US-09-750-590-2 x AW326301
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Ratio: 1.000
Percent Similarity: 100.000
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luLeuLeuHisPheSerIleGluGlnGluIleLysAspGlnGlnGluArg
                                                                            TTAAATGAAAAATTGGCCAATCTGAATAGGAAGTATGAGGAAGTATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Design and use of two pooled tissue normalized cDNA libraries for EST discovery in swine Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fahrenkrug, S.C., Freking
Stone, R.T., Heaton, M.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW326301.1 GI:6762222
EST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 10 row: N column: 2
Seq primer: ATTTAGGTGACACTATAG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 402 762 4366
Fax: 402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Smith TPL
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Mammalia; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW326301
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                                                                                                                                                                                                                                          to: AW326301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Sus scrofa"
/db_xref="taxon:9823"
/clone_lib="MARC 2PIG"
/tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from testis, ovary, endometrium, hypothalamus, pituitary, and placenta." 47 c 74 g 62 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Freking, B.A., Rohrer, G.A., Smith, T.P.L., Casas, E
on, M.P., Grosse, W.M., Bennett, G.A., Laegreid, W.W.
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Gaps: 0
Percent Identity: 100.000
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alignment_block:
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                                                                                                                                                                             US-09-750-590-2 x AI561529/rev
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                                                                                   1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGlnValIleAl 1365
                               1365 alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
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224 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGCCACATGGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               308
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                                                                                                                                                                                                                                                                    Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
MGI:673128
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tumor Gene Index
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 314)
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                                                                                                                                           to reverse of: AI561529
                                                                                                                                                                                                                                                                                                                                                              77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is from the 3' end quality sequence stop: 286. Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                       rounds of normalization, and was constructed by Bento Soares and M.Fatima Bonaldo." 87 c 80 g 70 t
                                                                                                                                                                                                                                                51.00
1.000
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/clone="IMAGE:1281328"
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/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="Thymus"
/dev_stage="4 weeks"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Soares_thymus_2NbMT"
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Gaps: 0
Percent Identity: 100.000
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0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UI-R-CNO-bkz-d-06-0-UI.sl UI-R-CNO Rattus norvegicus cDNA clone UI-R-CNO-bkz-d-06-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The sequence contained an oilgo-dT track that was present in the oligonucleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the Noti site and the oligo-dT track served to identify it as a clone from the normalized brown adipose library cDNA Library Preparation: M.B. Soares Lab Clone distribution: clones will be available through Research Genetics (www.resgen.com) The following repetitive elements were found in this cDNA sequence: 1-40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Program for Rat Gene Discovery and Mapping University of Iowa 451 Eckstein Medical Research Building Iowa Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Soares, MB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bonaldo, M.F., Lennon, G. and Soares, M.B. Normalization and subtraction: two appr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            >AT_rich#Low_complexity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: msoares@blue.weeg.uiowa.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 discovery
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POLYA-Yes
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                     71
                                                                                                                                                                                                                                               /lab_host="DH10B (Life Technologies)"
/note="vector: pT7T3D-Pac (Pharmacia) with a modified
/note="vector: pT7T3D-Pac (Pharmacia) with a modified
polylinker; Site_1: Not I; Site_2: Eco RI; The UI-R-CN0
polylinker; Site_1: Not I; Site_2: Eco RI; The UI-R-CN0
library is a normalized library constructed from the
following tissues: brown adipose, penis, salivary glands,
bladder, findus, cervix, seminal vesicles. For a detailed
                                                                    TAG_LIB=UI-R-CN0
TAG_TISSUE=brown adipose
                                                                                                                       described in (Bonaldo, 6:791-806, 1996)
                                                                                                                                                                                                 description of the library from which this clone was derived, please visit our web site at
                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="UI-R-CNO-bkz-d-06-0-UI"
/clone_lib="UI-R-CNO"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="Sprague-Dawley"
/db_xref="taxon:10116"
                                                                                                                                                                        ratest.eng.ulowa.edu.
                                                                                                                                                                                                                                                                                                                                                                                                               /dev_stage="ADULT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                  Lennon and Soares, Genome Research
                     94
                                                                                                                                                                              The subtraction has been previously
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US-09-750-590-2 x BF416703/rev
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BASE COUNT
ORIGIN
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LOCUS AA684631
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCTACCGGACACCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTGCAGGCAGCCTTGCTGCAGATCATACAGATGCGACAAGGCCTCGTG 136
                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Nat
95396786
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA684631 337 bp mRNA EST 03-APR-1998 EST104976 Rat PC-12 cells, untreated Rattus sp. cDNA clone RPCAE51 3' end, mRNA secuence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST
                                                                                                                                                                                                                                                            Email: nhlee@tigr.org
Seq primer: M13-21.
                                                                                                                                                                                                                                                                                                 The Institute for Genomic Research 9712, Medical Center Drive, Rockville, Tel: (301)-838-3529
Fax: (301)-838-0208
                                                                                                                                                                                                                                                                                                                                                                               Other_ESTs: EST104977
Contact: Lee, NH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Comparative expressed-sequence-tag analysis of differential gene expression profiles in PC-12 cells before and after nerve growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 337)
Lee, N.H., Welnstock, K.G., Kirkness, E.F., Earle-Hughes, J.A., Fuldner, R.A., Marmaras, S., Glodek, A., Gocayne, J.D., Adams, M.D., Kerlavage, A.R., Fraser, C.M. and Venter, J.C.
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Mamumalia; Eutheria;
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                 73
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                 D
             /clone_lib="Rat PC-12 cells, untreated"
/note="Vector: pBluescript SK:; Site_1: EcoRI; Site_2:
XhoI; poly(A)+ RNA was purified from untreated PC12 cells
cultured for 9 days. cDNA was constructed using an
oligo-dT primer and directionally cloned using the Lambda
ZAP II Vector Kit by Stratagene"
2AP II Vector Kit by Stratagene"
1 others
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1.000
                                                                                                                                              /db_xref="ATCC (inhost):2000223"
/db_xref="taxon:10118"
/clone="RPCAE51"
                                                                                                                                                                                                        /organism="Rattus sp."
                                                                                                                                                                                                                                              ocation/Qualifiers
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Rodentia;
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Gaps: 0
Identity: 100.000
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alignment_block:
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LOCUS BI276339
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                                                                                                                                                                                                                                                                     Email: msoares@blue.weeg.uiowa.edu
The sequence contained an oligo-dT track that was present in the
oligonucleotide that was used to prime the synthesis of first
strand cDNA and therefore this may represent a bonafide poly A
tail. The sequence tag present in the cDNA between the NotI site
and the oligo-dT track served to identify it as a clone from the
normalized rat aorta pool library cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
Research Genetics (www.resgen.com) The following repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Program for Rat Gene Discovery and Mapping University of Iowa 451 Eckstein Medical Research Building Iowa City, Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                           >AT_rich#Low_complexity
Seq primer: M13 Forward
POLYA=Yes.
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Normalization and
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                   elements were found in this cDNA sequence: 1-36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Soares, MB
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1.000
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/organism="Rattus norvegicus"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-CWO-bwp-a-05-0-UI"
/clone_lib="UI-R-CWO"
                                                                                                                                                   Location/Qualifiers
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Gaps: 0
Percent Identity: 100.000
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Rodentia;
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LOCUS AI501930
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US-09-750-590-2 x BI276339/rev
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGC 129
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                                                                                                                      Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AI501930 353 bp mRNA EST 03-JUL-1999 UI-R-CO-1v-b-05-0-UI.sl UI-R-CO Rattus norvegicus cDNA clone UI-R-CO-1v-b-05-0-UI 3', mRNA sequence.
Email: msoares@blue.wecg.uiowa.edu
The sequence contained an oligo-dT track that was present in the
                                                        Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                               97044477
                                                                                                                                                                                                             Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                       discovery
                                                                                                                                                                                                                                                     Normalization and subtraction: two approaches to facilitate gene
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Bonaldo, M.F., Lenno
                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                            Norway rat.
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI501930.1 GI:4399781
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                                                                           Eckstein Medical Research Building Iowa City, IA 52242, USA
: 319 335 8250
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TAG_TISSUE=rat aorta pool
TAG_SEQ=CTGTAGGATC"
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alignment_block:
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ORIGIN
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                                                                                                                                             1365 alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
                                                                                                                                                                                                                                                                           1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleA1 1365
                                                                                                         234 TATCTACCGGACACCCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG
                                                                                                                                                                                                                                            284 CTGCAGCAGCAGCTGGCTGATGCTGACAGACAGCACCAGGAAGTGATCGC
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spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
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/lab_host="Wector: pT773D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; The UI-R-CO library is a subtracted library derived from the UI-R-Al and UI-R-El libraries. The UI-R-Al library consisted of a mixture of individually tagged normalized libraries constructed from rat placenta, adult lung, brain, liver, kidney, heart, spleen, ovary, and muscle. The UI-R-El library consisted of a mixture of individually tagged normalized libraries constructed from 8, 12 and 18-day embryo. The tag is a string of 3-5 nucleotides present between the Not I site and the oligo-dT track which allows identification of the library of origin of a clone within the mixture. The subtracted library (UI-R-CO) was constructed as follows: PCR amplified CDNA inserts from a pool of UI-R-Al and UI-R-El clones from which 3' ESTs had been derived was used as a driver in a hybridization with the pooled UI-R-Al and UI-R-El library in the form of single-stranded circles. The remaining single-stranded circles (subtracted library) was purified by hydroxyapatite column chromatography, converted to
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/db_xref="taxon:10116"
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ATGTGCAGGCAGCCTTGCTGCAGATCATACAGATGCGACAAGGCCTCGTG

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REFERENCE
AUTHORS
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LOCUS AI764178
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The sequence contained an oligo-dT track that was present in the
oligonucleotide that was used to prime the synthesis of first
strand cDNA and therefore this may represent a bonafide poly A
tail. The sequence tag present in the cDNA between the NotI site
and the oligo-dT track served to verify it as a clone from the
normalized Eye library cDNA Library Preparation: M.B. Soares Lab
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451 Eckstein Medical Research Building Iowa City, IA 52242, USA
Tel: 319 335 8250
Fax: 319 335 9565
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Program for Rat Gene Discovery and Mapping
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Rattus norvegicus
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                                                                                                                                                                                                                                  which 3' ESTs had been derived were used as a driver in a hybridization with the normalized whole-eye library in the form of single-stranded circles. The remaining single-stranded circles (subtracted library) was purified by hydroxyapatite column chromatography, converted to by hydroxyapatite column chromatography, converted to
                                                                       bacteria (Life Technologies) to generate the UI-R-Y0 library. This procedure has been previously described (Bonaldo, Lennon and Soares, Genome Research 6: 791-6
TAG_LIB-UI-R-YO
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/strain="Sprague-Dawley"
/db_xref="taxon:10116"
                                                                                                                                                                                                        double-stranded circles and electroporated into DH10B
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/clone_lib="UI-R-Y0"
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AUTHORS
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KEYWORDS
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ORIGIN
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seq_documentation_block:
LOCUS AI764036
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity: 100.000
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source
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCAGCAGCAGCTGGCTGATGCTGACAGACAGCACCAGGAAGTGATCGC
                                                                                   The sequence contained an oligo-dT track that was present in the oligonucleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NoI site and the oligo-dT track served to verify it as a clone from the normalized Eye library cDNA Library preparation: M.B. Soares Lab Clone distribution: clones will be available through Research Genetics (www.resgen.com) The following repetitive elements were found in this cDNA sequence: 1-23, >AT_rich#Low_complexity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AI764036 370 bp mRNA EST UI-R-Y0-acy-b-03-0-UI.sl UI-R-Y0 Rattus norvegicus UI-R-Y0-acy-b-03-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                          Program for Rat Gene Discovery and Mapping
University of Iowa
451 Eckstein Medical Research Building Iowa City, IA 52242, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                 Tel: 319 335 8250 Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Soares, MB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome Res. 6 (9), 791-806 (1996)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bonaldo, M.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus
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                                             POLYA-Yes
                                                               Seq primer: M13 Forward
                                                                                                                                                                                                                                                                                                        Email: msoares@blue.weeg.uiowa.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Normalization and subtraction:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Norway rat.
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TAG_SEQ-CATTG"
a 98 c 9
               Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity: 100.000
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/organism="Rattus norvegicus"

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allgnment_block:
US-09-750-590-2 x AI764036/rev
                                                                                                                seq_name: gb_est2:W29292
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ORIGIN
                                           KEYWORDS
                                                                      ACCESSION
                                                                                                  DEFINITION
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Ratio: 1.000
Percent Similarity: 100.000
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               ORGANISM
                                                                                                                                                                                                                                                     1382 spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
                                                                                                                                                                                                                                                                                                                                                                            1349 LeuGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
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                                                                                                                                                                                                            Cys 1399
                                                                                                                                                                                                                                                                                               TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG
                                                                                                                                                                                                                                        ATGTGCAGGCAGCCTTGCTGCAGATCATACAGATGCGACAAGGCCTCGTG
                                                                                mc19a12:r1 Soares mouse p3NMF19.5 Mus musculus cDNA clone IMAGE:348958 5', mRNA sequence.
Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                         W29292.1 GI:1309459
                              nouse mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-Y0-acy-b-03-0-UI"
/clone_lib="UI-R-Y0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAG_SEQ-CATTG"
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                                                                                                             390 bp
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Gaps: 0
Percent Identity: 100.000
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seq_documentation_block: LOCUS BF011923
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US-09-750-590-2 x W29292
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ORIGIN
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                                                              seq_name: gb_est2:BF011923
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Ratio: 1.000
Percent Similarity: 100.000
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JOURNAL
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                                                                                                                                                                                                                                                                                                                                                                                                                       1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
                                                                                                                                                              1399 Cys 1399
                                                                                                                                                                                                                                  1382 spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
                                                                                                                 276
                                                                                                                                                                                                            226
                                                                                                                                                                                                                                                                                                     176 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGCCACATGGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                 126 CTGCAGCAGCAGCTGGCTGATGCTGACAGACAGCACCAAGAAGTTATCGC
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                                                                                                                   TGC
                                                                                                                                                                                                            ATGTGCAGGCAGCCCTACTGCAGATCATACAGATGCGACAAGGCCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. MGI:220758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Marra M/Mouse EST Project
WashU-HHMI Mouse EST Project
WashIngton University School of Medicinep
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 390)
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                                                                                                                   278
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 normalization to a Cot = 5. Library constructed by Bento Soares and M.Fatima Bonaldo. RNA was kindly provided by Dr. Minoru Ko (Wayne State University)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              double-stranded cDNA was size selected, ligated to Eco RI adapters (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of a modified pT7T3 vector (Pharmacia). Library went through one round of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="IMAGE:348958"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:10090"
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440 bp
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Gaps: 0
Percent Identity: 100.000
  mRNA
  EST
  06-OCT-2000
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KEYWORDS
SOURCE
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US-09-750-590-2 x BF011923/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
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                                                                                                                                                                                                                                                                       Align seg 1/1 to reverse of: BF011923
                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity: 100.000
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    ATGTGCAGGCAGCCCTACTGCAGATCATACAGATGCGACAAGGCCTTGTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Possible reversed clone: simila. Seq primer: -40RP from Gibco High quality sequence stop: 363
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA Sequencing by: Washington University Genome Sequencing Clone distribution: NCI-CGAP clone distribution information found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA Library Preparation: M. Bento Soares, Ph.D., M. Fatima Bonaldo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Robert Strausberg, Ph.D.
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Unpublished (1997)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap
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Mammalia; Eutheria;
1 (bases 1 to 440)
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/clone="IMAGE:3169275"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The sequence contained an oligo-dT track that was present in the oligonuclectide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NotI site and the oligo-dT track served to identify it as a clone from the embryonic retina tissue cDNA Library Preparation: M.B. Soares Lab Clone distribution: Researchers may obtain BMAP CDNA clones from RESEARCH GENETICS. It should be noted that Bento Soares is generating a small number of additional specialized non-redundant arrays of BMAP CDNAs whose availability will be considered under
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UI-M-CG0p-bni-h-01-0-UI.S1 NIH_BMAP_Ret4_S2 Mus musculus cDNA clone UI-M-CG0p-bni-h-01-0-UI 3', mRNA sequence.
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National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 301 443 1706 Fax: 301 443 9890
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
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/Clone_lib="NIH_BMAP_Ret4_S2"
/Clone_lib="NIH_BMAP_Ret4_S2"
/lab_host="DH10B (Life Technologies)"
/note="Vector: pT7T3D-Pac (Pharmacla) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; The NIH_BMAP_Ret4_S2 library is a subtracted library, ultimately derived from mouse retina tissue libraries at various stages of development. For a detailed description of the library from which this clone was derived, please visit our web site at brainest.eng.ulowa.edu.
TAG_LIB-NIH_BMAP_Ret4_S2
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TAG_SEQ-CTGCTAGCAGCA
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/strain="C57BL/6J"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL;
IMAGE Consortium (info@image.llnl.gov) for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Marra M/Mouse EST Project WashbrithMI Mouse EST Project Washington University School of MedicineP 4444 Forest Park Parkway, Box 8501, St. L/Tel: 314 286 1800 Fax: 314 286 1810
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Mammalla; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nouse mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 443)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                primer: -28m13 rev1 ET from Amersham
h quality sequence stop: 374.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to reverse of: BF462851
                                           87
                                       œ
                                                              /tissue_type="heart"
/dev_stage="13 day embryos"
/lab_host="$OLR (kanamycin resistant)"
/lab_hos
                                   sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
/strain="NIH/Swiss"
/db_xref="taxon:10090"
/clone="IMAGE:604189"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="pooled"
                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="Stratagene mouse heart (#937316)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
Rodentia;
                           CTCGAGTTTTTTTTTTTTTTTTTTT 3'*
119 g 118 t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to:
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alignment\_scores:

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REFERENCE
AUTHORS
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US-09-750-590-2 x AA153070/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnH19GlnGluValIleAl
                                                                                                                                                                                                               source
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203 TATCTACCGGACACCTCCTCAGTGCCGCACAGGGCCACATGGATGAAG 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253 CTGCAGCAGCTGGCTGATGCTGACAGACAGCACCAAGAAGTTATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGCAGGCAGCCCTACTGCAGATCATACAGATGCGACAAGGCCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           spValGlnAlaAlaLeuLeuGlnIleIleGlnMetArgGlnGlyLeuVal 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGC 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cys 1399
                                                                                                                                                                                                                                                     The sequence contained an oligo-dT track that was present in the oligonucleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NotI site and the oligo-dT track served to verify it as a clone from the normalized by library cDNA Library Preparation: M.B. Soares Lab Clone distribution: clones will be available through Research Genetics (www.resgen.com) The following repetitive elements were found in this cDNA sequence: 1-23, >AT_rich#Low_complexity seq primer: M13 Forward.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             University of Iowa
451 Eckstein Medical Research Building Iowa City,
Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bonaldo, M.F., Lennon, G. and Soares, M.B. Normalization and subtraction: two approaches to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UI-R-Y0-v1-d-04-0-UI.s1 UI-R-Y0 Rattus norvegicus cDNA clone UI-R-Y0-v1-d-04-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Program for Rat Gene Discovery and Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Soares,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genome Res. 6 (9), 791-806 (1996)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AI576759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: msoares@blue.weeg.uiowa.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Norway rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 449)
/dev_stage="adult"
//lab_host="DH10B (Life Technologies)"
//lab_host="Typ10B (Pharmacla) with
//note="Vector: pT7T3D-Pac (Pharmacla) with
polylinker; Site_1: Not I; Site_2: Eco RI;
                                                                                                                  /strain="sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-Y0-v1-d-04-0-UI"
                                                                                               /clone_lib="UI-R-YO"
                                                                                                                                                                                       /organism="Rattus norvegicus"
                                                                                                                                                                                                                                Location/Qualifiers
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Percent Identity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IA 52242,
    a modified
The UI-R-YO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Murinae;
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alignment_block:
US-09-750-590-2 x AI576759/rev
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ORIGIN
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LOCUS BE984856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name: gb_est2:BE984856
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE984856 465 bp mRNA EST 05-OCT-2000 UI-M-CGOp-bgn-e-01-0-UI.S1 NIH_BMAP_Ret4_S2 Mus musculus cDNA clone UI-M-CGOp-bgn-e-01-0-UI 3', mRNA sequence.
Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda,
20892-9643, USA
                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 465)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                      BE984856.1 GI:10657506
                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                    97044477
                                                                                                                                            Genome Res. 6 (9),
                                                                                                                                                                 discovery
                                                                                                                                                                                                                                                                                                                                                                             house mouse.
                                                                                                                                                                                                  Normalization and subtraction: two approaches to facilitate gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                library is a subtracted library derived from an individually-tagged normalized whole-eye (minus the lens) library. The driver for the subtraction consisted of a pool of all previous libraries (UI-R-AD, UI-R-AL, UI-R-ED, UI-R-EL, UI-R-CO, and UI-R-CL). The tag is a string of 3-5 nucleotides present between the Not I site and the oligo-dr track which allows identification of the library of origin of a clone within the mixture. The subtracted library (UI-R-YO) was constructed as follows: PCR amplified cDNA inserts from previous library clones from which 3' ESTs had been derived were used as a driver in a hybridization with the normalized whole-eye library in the form of single-stranded circles. The remaining single-stranded circles (subtracted library) was purified by hydroxyapatite column chromatography, converted to double-stranded circles (subtracted library) was purified by hydroxyapatite column chromatography, converted to double-stranded circles (subtracted library) was purified bacteria (Life Technologies) to generate the UI-R-YO library. This procedure has been previously described (Bonaldo, Lennon and Soares, Genome Research 6: 791-806,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
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Percent Identity: 100.000
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                                                                                                                                            (1996)
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148

COMMENT

TITLE

SOURCE VERSION

KEYWORDS

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alignment_scores:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                          seq_name: gb_est1:BE109950
KEYWORDS
                             VERSION
                                                        ACCESSION
                                                                                                                DEFINITION
                                                                                                                                                                     seq_documentation_block:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-590-2 x BE984856/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
                                                                                                                                                                                                                                                                                                                                       1399 Cys 1399
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                                                                                                                                                                                                                                                                                     137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237 TATCTACCGGACACCCTCCTCAGTGCCGCACAGGGCCACATGGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   287 CTGCAGCAGCAGCTGGCTGATGCTGACAGACCAGCACCAAGAAGTTATCGC
                                                                                                                                                                                                                                                                                     TGC 135
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                  BE109950 485 bp mRNA EST 13-JUN-2000 UI-R-BJ1-aum-c-06-0-UI.S1 UI-R-BJ1 Rattus norvegicus cDNA clone UI-R-BJ1-aum-c-06-0-UI 3', mRNA sequence.
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                          BE109950
BE109950.1 GI:8502055
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/lab_host**DHIOB (Life Technologies)*
/note**Vector: pT7T3D-Pac (Pharmacla) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; The NIH_BMAP_Ret4_S2 library is a subtracted library, ultimately derived from mouse retina tissue libraries at various stages of development. For a detailed description of the library from which this clone was derived, please visit our web site at brainest.eng.uiowa.edu.
TAG_LIB-NIH_BMAP_Ret4_S2
TAG_LIB-NIH_BMAP_Ret4_S2
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TAG_SEQ-CTGCTAGTAGCA"
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/clone="UI-M-CG0p-bgn-e-01-0-UI"
/clone_1ib="NIH_BMAP_Ret4_S2"
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/strain="C57BL/6J"
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alignment_block:
US-09-750-590-2 x BE109950/rev
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AUTHORS
TITLE
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MEDLINE
                                                                                       1365 alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
234 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG 185
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: msoares@blue.weeg.ulowa.edu
The sequence contained an oligo-dT track that was present in the oligonucleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NotI site and the oligo-dT track served to identify it as a clone from the normalized heart library cDNA Library Preparation: M.B. Soares Lab Clone distribution: clones will be available through Research Cenetics (www.resgen.com) The following repetitive elements were found in this cDNA sequence: 1-39, >AT_rich#Low_complexity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norv
Eukaryota;
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Fax: 319 335 9365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Soares, MB Program for Rat Gene Discovery and Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genome Res. 6 (9), 791-806 (1996) 97044477
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Bonaldo, M.F., Lennon, G. and Soares, M.B.
Normalization and subtraction: two approaches to facilitate gene
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
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/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-BJ1-aum-c-06-0-UI"
/clone_lib="UI-R-BJ1"
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alignment_block:
US-09-750-590-2 x BE632023/rev
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LOCUS BE632023
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                             1365 alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
                                                                                                                                              1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleA1 1365
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289 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGCCACATGGATGAAG
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                                                                                                                 CTGCAGCAGCAGCTGGCTGATGCTGACAGACCAGCACCAAGAAGTTATCGC
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Email: ggapbs-r@mail.nih.gov
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
MGI:1081127
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Other_ESTs: uull0d02.y2
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NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
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Location/Qualifiers
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BE632023.1 GI:9914711
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/lab_host="DH10B"
/note="wector: pT773D-Pac (Pharmacia) with a modified
/note="wector: pT773D-Pac (Pharmacia) with a modified
polylinker; lst strand CDNA was prepared from mammary
gland tissue from a lactating female, and was then primed
with a Not I - oligo(dT) primer. Double-stranded cDNA was
ligated to Eco RI adaptors (Pharmacia), digested with Not
I and cloned into the Not I and Eco RI sites of the
modified pT7T3 vector. Library is normalized. Library
was constructed by Bento Soares and M. Fatima Bonaldo. "
a 125 c 119 g 123 t
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/clone="IMAGE:3371523"
/clone_lib="Soares_mammary_gland_NMLMG"
/sex="female (lactating)"
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alignment_scores:
Quality:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: msoares@blue.weeg.uiowa.edu
The sequence contained an oligo-dT track that was present in the
oligonucleotide that was used to prime the synthesis of first
strand cDNA and therefore this may represent a bonafide poly A
tail. The sequence tag present in the cDNA between the NotI site
and the oligo-dT track served to identify it as a clone from the
normalized rat aorta pool library cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
451 Eckstein Medical Research Building Iowa City, IA 52242, USA
Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BI274053
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Seq primer: M13 Forward
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       /dev_stage="ADULT"
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/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
/note="Vector: Stage Record Fig. 2: Eco RI; The UI-R-CW0
library is a normalized library constructed from the
following rat aorta tissues: embryonic day 19, embryonic
day 21, adult day 1, adult day 19, adult day
200. For a detailed description of the library from which
this clone was derived, please visit our web site at
ratest_eng_ulowa_edu. The subtraction has been previously
accepted in page 100 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Rattus norvegicus"
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/db_xref="taxon:10116"
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/clone_"UI-R-CWO"
                                                                                                                                                                                                                                                                                                                                            6:791-806, 1996)
TAG_LIB=UI-R-CWO
                                                                                                                                                                                                                TAG_SEQ=CTGTAGGATC"
130 c 123 g
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                                                                                                                                                                                                                                                                                                    TAG_TISSUE=rat aorta
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        51
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                 alignment_scores:
Quality:
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seq_documentation_block:
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ORIGIN
                      BASE COUNT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1365 aIleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  143 TGC 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                       source
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
1 (bases 1 to 544)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;, mRNA sequence.
BE626693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uu10d02.y2 Soares_mammary_gland_NMLMG IMAGE:3371523 5' similar to TR:075268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
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National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   primer: -40RP from Gibco
                         147
                                                                                                                                                                                                                                                                                                                                                                                                                                   quality sequence stop: 468.
Location/Qualifiers
                         Ø
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polylinker; 1st strand cDNA was prepared from mammary
gland tissue from a lactating female, and was then primed
with a not I - oligo(dT) primer. Double-stranded cDNA was
ligated to Eco RI adaptors (Pharmacia), digested with Not
I and cloned into the Not I and Eco RI sites of the
modified pT7T3 vector. Library is normalized. Library
modified pT7T3 vector. Library is normalized.
                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
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/sex="female (lactating)"
                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
                      constructed by Bento Soares and M. Fatima Bonaldo. 147 c 160 \text{ g} 90 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   544 bp
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075268 F20887_1, PARTIAL
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LOCUS BF466442
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US-09-750-590-2 x BE626693
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MEDLINE
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Percent Similarity: 100.000
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                                                                                                                                                                                       source
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGC 487
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                                                                                                                                                                                                                                                       The sequence contained an oligo-dT track that was present in the oligonucleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NotI site and the oligo-dT track served to identify it as a clone from the retina tissue cDNA Library preparation. M.B. Soares Lab Clone distribution: Researchers may obtain BMAP cDNA clones from RESEARCH GENETICS. It should be noted that Bento Soares is generating a small number of additional specialized non-redundant arrays of BMAP cDNAs whose availability will be considered under appropriate and limited collaborative arrangements
                                                                                                                                                                                                                            Seq primer POLYA-Yes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Chin, H
Contact: Chin, H
National Institute of Mental Health
National Institute Blvd, Room 7N-7190, MSC 9643, Bethesda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Res. 6 (9), 791-806 (1996) 97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF466442 604 bp mRNA EST 04-DEC-
UI-M-CG0p-bqy-e-08-0-UI.S1 NIH_BMAP_Ret4_S2 Mus musculus
UI-M-CG0p-bqy-e-08-0-UI 3', mRNA sequence.
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Bonaldo, M.F., Lenno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; E
Mammalla; Eutheria; Rodentia; Sclurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: mEST@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           discovery
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST
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301 443 9890
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                                                                                                                                         /organism="Mus musculus"
/strain="C57BL/6J"
                                                                                                                                                                                                         ocation/Qualifiers
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Percent Identity: 100,000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              484
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
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                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_documentation_block:
LOCUS BF722070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_est2:BF722070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_scores:
Quality:
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ORIGIN
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      source
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                                                                                                           MGI:1470220
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                     Location/Qualifiers
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alignment_block:
US-09-750-590-2 x BF466442/rev
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1365 aIleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238 TATCTACCGGACACACCTCCTCAGTGCCGCACAGGGCCCACATGGATGAAG 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288 CTGCAGCAGCTGGCTGATGCTGACAGACAGCACCAAGAAGTTATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF722070 634 bp mRNA EST 03-JAN-2001 mab14c07.y1 Soares_NMEBA_branchial_arch Mus musculus cDNA clone IMAGE:3970188 5' similar to TR:Q9Y3T5 Q9Y3T5 HYPOTHETICAL 39.8 F
Possible reversed clone: similarity on wrong strand Seq primer: -40RP from Gibco High quality sequence stop: 356.
                                                                                                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                             Tumor Gene Index 
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae;
1 (bases 1 to 634)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN ;, mRNA sequence. BF722070
                                                                                                                                                                                                                                                                                                          cDNA Library Preparation:
                                                                                                                                                                                                                                                                                                                                                                                                                               NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF722070.1 GI:12023063
                                                                                                                                           image.linl.gov/image/html/iresources
                                                                                                                                                               CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Washington University Genome Sequencin Clone distribution: NCI-CGAP clone distribution information of through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIH_BMAP_Ret4_S2 library is a subtracted library, ultimately derived from mouse retina tissue libraries at various stages of development a detailed description of the library from which this clone was derived, please visit our web site at brainest.eng.ulowa.edu. TAG_LIB-NIH_BMAP_Ret4_S2 TAG_TISSUE-adult-retina TAG_SEQ-GTCAGCGCGCAC*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51.00
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Percent Identity: 100.000
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                                                                                                                                                                                           Sequencing Center information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                          Bonaldo
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BASE COUNT
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KEYWORDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cys 1399
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGC 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCAGCAGCAGCTGGCTGATGCTGACAGACAGCACCAAGAAGTTATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BI274494 652 bp mRNA EST 18-JUL-2001 UI-R-CWO-bwj-e-06-0-UI.sl UI-R-CWO Rattus norvegicus cDNA clone UI-R-CWO-bwj-e-06-0-UI 3', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BI274494
BI274494.1 GI:14885460
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University of Iowa
451 Eckstein Medical Research Building Iowa City,
Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 652)
Bonaldo, M.F., Lenno
                                                                                                                                                    Program for Rat Gene Discovery and Mapping
                                                                                                                                                                                                  Contact: Soares, MB
                                                                                                                                                                                                                                           97044477
                                                                                                                                                                                                                                                                                Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                      discovery
                                                                                                                                                                                                                                                                                                                                                           Normalization and subtraction: two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Norway rat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
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/dev_stage="embryo, 10.5 dpc"
/lab_host="DH10B (phage resistant)"
/lab_host="DH10B (phage resistant)"
/note="vector: pT7T3D-Pac (Pharmacia) with a modified
/note="vector: pT7T3D-Pac (Pharmacia) with a modified
/note="vector: pT7T3D-Pac (Pharmacia) with a modified
/note="vector: pH7T3D-Pac (Pharmacia) with a modified
/note="vector: pH7T3D-
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173 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          constructed and normalized by Bento Soares and M.Fatima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3']; double-stranded cDNA was ligated to Eco RI adaptors
(Pharmacia), digested with Not I and cloned into the Not
I and Eco RI sites of the modified pT7T3 vector. Librar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="IMAGE:3970188"
/clone_lib="Soares_NMEBA_branchial_arch"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
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                                                                                                                                                                                                                                                                                                                                                                                                Lennon, G. and Soares, M.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 51
Gaps: 0
Percent Identity: 100.000
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                                                                                      IA 52242, USA
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SOURCE

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                                                                                                                                                         seq_documentation_block:
                                                                                                                                                                                                        seq_name: gb_est2:BI411534
                                                       ACCESSION
                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Align seg 1/1 to reverse of: BI274494 from: 1
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                                                                                                                                                                                                                                                                                                                     1399 Cys 1399
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              249 TATTTACCGGACACCTCCTCAGTGCCGCACAGGGTCACATGGATGAAG
                                                                                                                                                                                                                                                                                                                                                                       TGC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        oligonicleotide that was used to prime the synthesis of first strand cDNA and therefore this may represent a bonafide poly A tail. The sequence tag present in the cDNA between the NotI site and the oligo-dT track served to identify it as a clone from the normalized rat aorta pool library cDNA Library Preparation: M.B. Soares Lab Clone distribution: clones will be available through Research Genetics (www.resgen.com) The following repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    elements were found in this cDNA sequence: 1-24,
BI411534
BI411534.1 GI:15172457
EST.
                                                                                                       BI411534 782 bp mRNA EST 14-AUG-2001 602965128F1 NCI_CGAP_Lu33 Mus musculus cDNA clone IMAGE:5120670 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seq primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              >AT_rich#Low_complexity
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                                                                                   mRNA sequence.
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/lab_host="DHIOB (Life Technologies)"
/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
polylinker; Site_1: Not I; Site_2: Eco RI; The UI-R-CWO
library is a normalized library constructed from the
following rat aorta tissues: embryonic day 19, embryonic
day 21, adult day 1, adult day 175, adult day
200. For a detailed description of the library from which
this clone was derived, please visit our web site at
this clone was derived, please visit on has been previously
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAG_SEQ-CTGTAGGATC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         described in (Bonaldo, Lennon and Soares, Genome Research 6:791-806, 1996)
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/clone_lib="UI-R-CWO"
/dev_stage="ADULT"
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/strain="Sprague-Dawley"
/db_xref="taxon:10116"
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Mus musculus

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 (bases 1 to 782)
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High quality sequence start: 24
High quality sequence stop: 782.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA Sequencing by:Incyte Genomics, Inc.
Clone distribution: NCI-CGAP clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://imagg.llnl.gov
Plate: LLAM11294 row: g column: 07
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CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
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Tissue Procurement: Gilbert Smith, Ph.D.
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National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
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/db_xref="taxon:10090"
/clone="IMAGE:5120670"
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                     Please visit our web site (http://genome.gsc.riken.go.jp/) for
                                                                                                                                                                                                                              Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Gemomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, RIKEN 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                       Submitted (10-JUI-2000) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome
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S (bases 1 to 1545)

Adachs 1 to 1545
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Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning.
Methods in enzymology. 303, 19-44 (1999)
99279253
prepared by using trehalose thermo-activated reverse transcriptase
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Carninoi,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new g
Genome research. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                 further details.
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Shibata, K., Itoh, M.,
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ### TOTAL TOTAL TO THE PROPERTY OF THE PROPERT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           сув 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and subsequently enriched for full-length by cap-trapper. Second stand cDNA was prepared with the primer adapter of sequence [5' GAGAGARAGATTCTCGAGTTAATTAATCCCCCCCCCCC 3']. cDNA was cleaved with XhoI and SstI. Cloning sites, 5' end: XhoI; 3' end: SstI.
                                                                                                                                                                                                                                                                                                                                       AA869540 603 bp mRNA EST 16-MAR-1998 vq09c07.rl Barstead stromal cell line MPLRB8 Mus musculus cDNA clone IMAGE:1093740 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 603)
                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                            AA869540.1 GI:2964985
                                                                                                                                                                        house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio:
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/db_xref="G1:12849207"
/db_xref="G1:12849207"
/translation="MKASLREKEEESQKKTKEVSKLQTEVQTTKQALKNLETREVVDM
/translation="MKASLREKEEESQKKTKEVSAKDEKELLHLS:EQEIRQQKE
SKYKANTKNDLETQISKUDKLASLNRKYDQACEEKVSAKDEKELLHLS:EQEIRQQKE
RCDKSLTTIMELQQRIQESAKQIEAKDNKITELLNDVERLKQALNGLSQLTYSSGSPT
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371 c 462
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/clone_lib="RIKEN full-length enriched mouse cDNA library"
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/db_xref="MGD:MGI:1919815"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:10090"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="putative"
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Gaps: 0
Percent Identity: 100.000
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                                                     Mus.
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COMMENT
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ORIGIN
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US-09-750-590-2 x AA869540
                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
seq_name: gb_est1:AL044711
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JOURNAL
                                                                                                                                                                                                                                                                                                                                                                     Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WashU-HHMI Mouse EST Project
Washington University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              High quality sequence stop: Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Putative full length read vector to vector length is 673 Seg primer: -28ml3 rev2 ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Marra M/Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The WashU-HHMI Mouse EST Project
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            full length read
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Barstead stromal cell line MPLRB8"/cell_line="C2C12 (undifferentiated)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="IMAGE:1093740"
                                                                                                                                                                                                                                                                                                                                                                                                         47.00
                                                                                                                                                                                                                                                                                               from: 1 to: 603
                                                                                                                                                                                                                                                                                                                                                                          Percent Identity:
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0
100.000
                   sapiens cDNA clone
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seq_documentation_block:
LOCUS BF148472
          VERSION
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US-09-750-590-2 x AL044711
                              ACCESSION
                                                                                          DEFINITION
                                                                                                                                                                        seq_name: gb_est2:BF148472
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ORIGIN
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VERSION
KEYWORDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality: 45.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: AL044711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
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                                                                                                                                                                                                                                                                                                                                                                                    357
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                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                   ysTyrGlyHisAlaLeuCysLeuGlnLysLeuLeu 108
                                                                                                                                                                                                                                                                                           PILeThrThrSerAspThrAlaGlyArgAsnAlaLeuHisLeuAlaAlaL 97
                                                                                                                                                                                                                                                                                                                                                                             TCAAAGGGGAATCTTGAGTGTTTGAATGCCATCCTTATACATGGAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                 SerLysGlyAsnLeuGluCysLeuAsnAlaIleLeuIleHisGlyValAs 80
                                                                                                                                                                                                             AGTATGGACATGCATTGTGCCTACAAAAACTTCTA 491
                                                            uy81e10.x1 NCI_CGAP_Mam5 Mus musculus cDNA clone IMAGE:3665994 similar to TR:09Y3T5 09Y3T5 HYPOTHETICAL 39.8 KD PROTEIN ;, mRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 491)
Poustka, A., Klein, M.
EST (Poustka, et al.
Unpublished (1999)
BF148472.1 GI:11029867
                              sequence.
BF148472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No s1 sequence available.
This clone (DKFZp434EZ235) is available at the RZPD in Berlin Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 140; Berlin-Charlottenburg, GERWANY; Email: clone@rzpd.de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: poustka@mpimg-berlin-dahlem.mpg.de
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKFZ); Email s.wiemann@dkfz- heidelberg.de;
sequenced by DKFZ (German Cancer Research Center,
Heidelberg/Germany) within the cDNA sequencing consortium of the
German Genome Project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Department Lehrach
Max-Planck-Institute for Molecular Genetics
Ihnestrasse 73, 14195 Berlin, Germany
Tel: +49-30-84131623
Fax: +49-30-84131128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Poustka A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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AL044711.1 GI:5432924
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="DKF2p434E2235"
/clone_11b="434 (synonym: htes3)"
/tlssue_type="test1s"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note-"Vector: pSport1; Site_1: Not1; Site_2: Sal1" 127 c 147 g 100 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host-"DH10B"
                                                                                                          352 bp
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from: 1
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Gaps: 0
Percent Identity: 100,000
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                                                                                                                                                                                                                                                                                             456
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                                                              mRNA
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seq_documentation_block: LOCUS BG920973
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US-09-750-590-2 x BF148472/rev
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SOURCE
ORGANISM
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AUTHORS
TITLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality: 44.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                                                       1382 spValGlnAlaAlaLeuLeuGlnIleIleGln 1392
                                                                                                                                                                                                                                                                                                           1365 alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluA 1382
                                                                                                                                                                                                                                                                                                                                                                              1349 LeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisGlnGluValIleA1 1365
                                                                                                                                                                                                                                                                    230 TATCTACCGGACACCCCCCCAGTGCCGCACAGGGCCACATGGATGAAG
                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                       280 CTGCAGCAGCAGCTGGCTGATGCTGACAGACAGCACCAAGAAGTTATCGC 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                ATGTGCAGGCAGCCCTACTGCAGATCATACAG
                                                                                                                                    gb_est2:BG920973
609 bp mRNA 602822893F1 NCI_CGAP_Mam6 Mus musculus mRNA sequence.
BG920973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nlh.gov

Tissue Procurement: Lothar Hennighausen Ph.D., Robin Humphreys

cDNA Library Preparation: Life Technologies, Inc.

cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Washington University Genome Sequencing Center

Clone distribution: NCI-CGAP clone distribution information can be

found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence stop:
Location/Qualifiers
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Possible reversed clone: polyT not found Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1997)
Other_ESTs: uy81e10.y1
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
1 (Dases 1 to 352)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
NRALional Cancer Institute, Cancer Genome Anatomy Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tumor Gene Index
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house mouse
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sal1; Site_2: Not1; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Robin Humphreys,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="tumor, gross tissue"
/dev_stage="7 months"
/lab_host="DH10B"
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/clone="IMAGE:3665994"
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/strain="C57/B6"
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Gaps: 0
Percent Identity: 100.000
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                                                cDNA clone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 others
                                                                                                                                                                                                                                                                       181
                                                IMAGE: 4951775
                                                                    05-JUN-2001
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; Murinae; Mus
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VERSION
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US-09-750-590-2 x BG920973
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SOURCE
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TITLE
                                                                                                                       DEFINITION
                                                                                                                                                            seq_documentation_block:
                                                                                                                                                                                                  seq_name: gb_est2:BI105199
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ORGANISM
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                                                                                                                                                                                                                                                                                                                                                SValAspLeuGlnGlyArgThrAlaLeuHisAspAlaAlaMetAlaAspC 133
                                                                                                                                                                                                                                                                     ysProSerSerIleGlnLeuLeuCys 141
                                                                                                                                                                                                                                                                                                                                                                                                              CACGCGTTGTGCCTGCAGAAACTTCTACAGTACAACTGTCCCACTGAGCA 381
                                                                                                                                                                                                                                               GTCCTTCCAGCATCCAGCTGCTCTGT
                                                                                                                                                                                                                                                                                                                               TGTGGACCTTCAAGGAAGAACTGCCCTTCATGATGCAGCCATGGCAGACT 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MCC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM10908 row: 1 column: 24
High quality sequence stop: 608.
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Tissue Procurement: Jeffrey Green M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 609)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG920973.1
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National Institutes of Health, Mammalian Gene Collection (MGC)
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                                                                                                                 #1105199 925 bp mRNA
602893473F1 NCI_CGAP_Lu29 Mus musculus
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Mus musculus
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                                                                                                  mRNA sequence.
                   house mouse
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100.000
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163 c 178 g 112 t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="IMAGE:4951775"
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/sex="female, virgin"
/tissue_type="infiltrating ductal carcinoma"
/dev_stage="5 months"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /strain="FVB/N"
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Gaps: 0
Identity: 100.000
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                                                                                                                          cDNA clone
                                                                                                                       26-JUN-2001
IMAGE:5038363 5',
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JOURNAL COMMENT
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ORGANISM
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                                                                                                                                                                                                                                                       seq_documentation_block:
                                                                                                                                             KEYWORDS
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                                                                                                                                                                   VERSION
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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Ratio:
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Tissue Procurement: Gilbert Smith, Ph.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution: MGC clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
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Contact: Robert Strausberg, Ph.D.
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Plate: LLAM11106 row: a column:
                                                                                                                                                                                                                         BI156388 646 bp mRNA
602919646F1 NIH_CGAP_Mam3 Mus
                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 646)
                                                                                                       Mus musculus
                                                                                                                                                EST
                                                                                                                                                                                      mRNA sequence.
BI156388
    NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                     BI156388.1 GI:14616389
                                                                                                                            house mouse
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Stem cell origin."
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/clone_lib="NCI_CGAP_Lu29"
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/strain="CZECH II (feral)"
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Gaps: 0
Percent Identity: 100.000
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                                                                                                                                                                                                                                   musculus cDNA clone IMAGE:5060099 5',
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VERSION
KEYWORDS
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LOCUS AA840271
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US-09-750-590-2 x BI156388
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ORIGIN
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Ratio: 1.000
Percent Similarity: 100.000
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         TITLE
                                                                                                                      AUTHORS
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AA840271
                                   Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B., Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                           Mus musculus
                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus
                          Waterston, R.
                                                                                                                                                                                                                                                                           AA840271.1 GI:2915930
                                                                                                                                                                                                                                house mouse
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Tissue Procurement: Lothar Hennighausen Ph.D., Chu-Xia Deng Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAMI1162 row: k column: 12
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Location/Qualifiers
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Contact: Robert St
                                                                                                                                         (bases 1 to 308)
WashU-HHMI Mouse
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="organ: mammary; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: SalI; Cloned unidirectionally, Primer: Oligo dT. Average insert 2 kb. Library constructed by Life Technologies, catalog #12017-018. Investigators providing samples: Lothar Hennighausen/Chu-Xia Deng, NIH Reference for transgenic model: Xu et al., Nature Genetics 22, 37-43 (1999). Note: this is a NCI_CGAP Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="NIH_CGAP_Mam3"
/tissue_type="tumor, gross tissue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:10090"
/clone="IMAGE:5060099"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                             308 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
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Percent Identity: 100.000
EST Project
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         410
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REFERENCE
AUTHORS
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VERSION
KEYWORDS
                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS AA499973
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US-09-750-590-2 x AA840271/rev
                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                  seq_name: gb_est1:AA499973
                                                                                                                                 SOURCE
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ORIGIN
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Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                               ORGANISM
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                                                                                                                                                                                                                                                                                                                                                                                                 1305 rGluLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1322 erGlnLeuThrTyr 1326
                                                                                                                                                                                                                                                                                                                                                                                   112 TGAACTTCTGAATGATGTCGAAAGACTAAAGCAGGCGCCTCAACGGCCTTT
                                                                                                                                                                                                                                                                                                                      62
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                                                                                                                                                                                                                                                                                                                  CTCAGCTCACCTAC 49
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 348)
Marra,M., Hiller,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T., Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M., Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B.,
                                                                                                                                                                               5', mRNA sequence.
AA499973
                                                                                                                                                                                                   vg06d12.rl Soares mouse
5', mRNA second
                                                                                                         Mus musculus
                                                                                                                                                 EST
                                                                                                                                                               AA499973.1 GI:2234940
                                                                                                                                                                                                                                 AA499973
                                                                                                                             house mouse.
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WashIngton University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. L/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seq primer: -28ml3 rev1 ET from High quality sequence stop: 299.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: mouseest@watson.wustl.edu
This_clone is available royalty free through LLNL; contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1996)
Contact: Marra M/Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGI:664754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMAGE Consortium (info@image.llnl.gov)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:10090"
/clone="IMAGE:1262202"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="whole skin"
/dev_stage="11 weeks old"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /sex="females"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Stratagene mouse skin (#937313)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/strain="C57BL/6"
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100.000
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                                                                                                                                                                                                          ST 01-JUL-1997
cDNA clone IMAGE:860
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COMMENT
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              ACCESSION
VERSION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
                                                                                                                    seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality: 38.00
Ratio: 1.000
Percent Similarity: 100.000
                                                                                  DEFINITION
                                                                                                                                                     seq_name: gb_est2:BF147659
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                                                                                                                                                                                                                                                         1289 ArgIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIleTh 1305
                                                                                                                                                                                                                        1322 erGlnLeuThrTyr 1326
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                                                                                                                                                                                                                                                                                                                                58
                                                                                                                                                                                        CTCAGCTCACCTAC 171
                                                                                                                                                                                                                                                                                                                                AGGATCCAGGAGTCCGCCAAGCAGATCGAAGCCAAGGACAATAAGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WashU-HHMI Mouse EST Project
Washington University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                 us37f02.x1 Soares_NMEBA_branchial_arch Mus musculus cDNA clone IMAGE:3169275 3' similar to TR:Q9Y3T5 Q9Y3T5 HYPOTHETICAL 39.8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1996)
Contact: Marra M/Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The WashU-HHMI Mouse EST Project
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BF147659.1 GI:11028981 EST.
                                                                                                      BF147659
                              BF147659
                                               PROTEIN ; , mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               primer: -28m13 rev2 ET from Amersham h quality sequence stop: 329. Location/Qualifiers
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314 286 1810
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Bonaldo.*
96 c 98 g 53 t
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/strain="C57BL/6J"
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/clone="IMAGE:860567"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /dev_stage="4 weeks"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type-"heart"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone_lib="Soares mouse NbMH"
                                                                                                    603 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length: 38
Gaps: 0
Percent Identity: 100.000
                                                                                                      mRNA
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COMMENT
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                                   seq_documentation_block:
                                                                     seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                              Quality: 38.00
Ratio: 1.000
Percent Similarity: 100.000
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                                                                                                                                                                             1289 ArgIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIleTh 1305
                                                                                                                                             1322 erGlnLeuThrTyr 1326
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                                                                                                                                                                                                                                                       260 AGGATCCAGGAGTCCGCCAAGCAGATCGAAGCCAAGGACAATAAGATAAC
                                                                                                       CTCAGCTCACCTAC 373
                                                                                                                            gb_est2:BF161191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1997)
Other_ESTs: us37f02.yl
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
CDNA_Library Preparation: M. Bento Soares, Ph.D., M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 603) NCI-CCAP http://www.ncbi.nlm.nih.gov/ncicgap. National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
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BF161191 946 bp mRNA
601769451F1 NCI_CGAP_Lu29 Mus
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov/image/html/iresources.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Possible reversed clone: similarity on wrong strand Possible reversed clone: polyT not found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MGI:1064735
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bonaldo.*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     constructed and normalized by Bento Soares and M.Fatima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:3169275"
/clone_lib="Soares_NMEBA_branchial_arch"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Mus musculus"
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                  946
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cDNA clone
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     30-OCT-2000
IMAGE:3988621 5',
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DEFINITION

musculus

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ACCESSION
VERSION
KEYWORDS
SOURCE
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Quality:
Ratio:
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US-09-750-590-2 x BF161191
                                                                                               DEFINITION
                                                                                                                                                                      seq_name: gb_est2:R58050
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ORIGIN
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AUTHORS
TITLE
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VERSION
KEYWORDS
SOURCE
ORGANISM
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Ratio: 1,000
Percent Similarity: 100.000
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                                                                                                                                                                                                          CTCAGCTCACCTAC 344
                                                                                                                                                                                                                                                 erGlnLeuThrTyr 1326
                                                                                                                                                                                                                                                                             AGGATCCAGGAGTCCGCCAAGCAGCAGTCGAAGCCAAGGACAATAAGATAAC
                                                         R58050
                                                                                             F9035 Fetal heart Homo
                                                                                                                 R58050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: cgapbs-r@mail.nih.gov

Tissue Procurement: Gilbert Smith, Ph.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://lmage.llni.gov
plate: LLAM9197 row: f column: 14
High quality sequence stop: 637.
                                   R58050.1 GI:828108
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National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
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BF161191
BF161191.1 GI:11041311
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Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus
(bases 1 to 946)
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a 240 c 262 g 155 t
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/tissue_type="spontaneous tumor, metastatic
Stem cell origin."
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AACTCACCTAC 113
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1 (bases 1 to 265)

Hwang,D.M., Fung,Y.W., Wang,R.X., Laurenssen,C.M., Ng,S.H., Lam,W.Y., Tsui,K.W., Fung,K.P., Waye,M., Lee,C.Y. and Liew,C.C.

Analysis of expressed sequence tags from a fetal human heart cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: liewcc@utcc.utoronto.ca
Seq primer: GGTGGCGACGACTCCTGGAGCC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 4169788758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Department of Laboratory Medicine and Pathobiology University of Toronto
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/lab_host="E. coll Y109"
/lab_host="E. coll Y109"
/note="Vector: Lambda 9122; Site_1: NotI; Site_2: SalI;
/note="Vector: Lambda 9122; Site_1: NotI; Site_2: SalI;
mRNA was purified from human fetal hearts (10-12 weeks).
CDNA was constructed using a NotI-Oligo of adaptor-primer.
SalI adaptors were ligated, followed by digestion with
NotI, for direction cloning into predigested lambda 9t22.
Method is described in J. Mol. Cell. Cardiol. (1994) 26,
1329-1333) described in 50 t
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/db_xref="taxon:9606"
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Title:
Perfect score:
Sequence:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

REFERENCE	JOURNAL	TITLE	REFERENCE AUTHORS		SOURCE	VERSION KEYWORDS	DEFINITION ACCESSION	RESULT AF322916 LOCUS		c 45	4 4	2 2	40 41	39	3 <b>7</b>	<u>ა</u> ი	νω ι 4- 1	J (J	31 5	29	งผ	25 26	24	222	υN	19	17	15:	1 1 3	, <sub>1-1</sub>	بر بـ	ი •		ი ი თ ს	4.0	ω <sub>κ</sub>	, <u>L</u>	Result No.
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Submitted (20-NOV-2000) Kumamoto University Graduate School of
Medical Sciences, Division of Immunogenetics, Department of
Neuroscience and Immunology, 2-2-1 Honjo, Kumamoto 860-0811, Japan
Location/Qualifiers
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50	aggtggcggagtgcaaggccttagcattggaatgtgaaagggtgaaagag 	74	Qy Db
1744 1447	gaagcaatgagaactttctgtgattcagcaaaacaagacagac	1685 1388	Оy
1684 1387	gagctagccttacctaatcaagcctcatattcggaaaacgaaatttaaagaaag	1625 1328	Qy Db
1624 1327	cagtgtacttccacaggcatgccagtccatatgcaaagccgatctatgttaagaccactg	1565 1268	pb Qy
1564 1267	ttcagaaagaagatatgcttcttaaacaaggtcaaatgtacatgacagactca 		Оy
1510 1207	gaggctctgaaaagtagatttaagtattttgagagtgatcattttaggatcaggaagtcat 	1451 1148	Qy Db
1450 1147	abgctgaagtcccttttggcbgccbaagababgccbctgaagaaagcctbabgabctatt 	1391 1088	Qy Db
1390 1087	ttacagctacagctgaatgaggaagtaatggtggctgatgatctggaaagtgagaaagaa	1331 1028	Qy Db
1330 . 1027	aaagagagattgagaaaaattcagcaagaacagagaatattattggataaagtcaatggt 	1271 968	Qy Db
1270 967	tgaaaatgaagatctg                 GAAAATGAAGATTTG	1211 908	Qy Db
1210 907	aagaaaggaccatctttacaacagcgaaatttgtctcagatgctagatgaagtaaatacg 	1151 848	Qy Db
1150 847	gacattctaaccttactgaagactgcatcagaaaattccaacaaagggagagaga	1091 788	Οy
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2	Qy	g 1624	ag tg tacttccacaggca tgccagtcca ta tgcaaagccga tcta tg tta agacc	
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2	Qy	1564	tcaggaaagaagatatgcttcttaaacaaggtcaaatgtacatgacagac	
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Savonet, V.

Direct Submission

Direct Submission

Submitted (06-JUL-1996) V. S.

Research - ULB, Building C (
Lennik 808, 1070 Brussels, B

revised by [3]
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Canis familiaris mRNA
X99145
X99145.2 GI:10944717
C3VS protein.
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Submitted (20-CCT-2000) V. Savonet, Institute of Interdisciplinary
Research - ULB, Building C (local C4-124), Campus Erasme, Route de
Lennik 808, 1070 Brussels, BELGIUM
On Oct 21, 2000 this sequence version replaced gi:1429313.
Location/Qualifiers
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J. Biol. Chem. 2
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Score 2754.4;
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3433		2359 tgagaatttgaaggccaaactggctcagcacgtcaaaccagaggaacatgagcagctcaa 241	, o
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7 313 ggaagagtgtgagagaaatttaaagccactgagaaagaactaaaagaacagctatccca 	ДЪ	Qy 2239 atttgaaaacatgaagagcttgttatcaaatgaactgaacgagaaggcaaaaaaattaat 2298	<u>а</u> ю
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/ 3193 taagtacaaaaaagoccaggaggagattgtcaccctgcatgaggagattgcagcccagaa 	Оу	Qy 2119 gcagaaggagttgagcatgtgtgaactggagcgagagaagaaggaag	<u>u</u> .o
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38 38	Qy dd	Qy 1999 gaaatacgaaggtgcgtccgcagaagtggggaaattgggaaaccaaatcaaacaaa	U 0
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		Qy 1819 gataaagcaactagaagatgccttgaaagacgtgcagaagagaatgtatgagtcggaagg 1878 	<b>п</b> ю
3640		Qy 1759 ggcggagtgcaaggccttagcattggaatgtgaaagggtgaaagaggattcagatgagca 1818 	р <b>О</b>
2773 3580	<u>-</u> .		ь о
2713 3520		Qy 1639 tantcaagcotcatattcggaaaacgaaattttaaagaaagaattagaagcaatgagaac 1698 	п о
34 34		Oy 1579 aggcatgccagtccatatgcaaagccgatctatgttaagaccactggagctagccttacc 1638	
(4) (5)	_	Oy 1519 agaagatatgcttcttaaacaaggtcaaatgtacatgacagactcacagtgtacttccac 1578	
253 334		Qy 1465 tagatttaagtattttgagagtgatcatttagggatcaggaagtcatttcaggaa 1518	
247 328	_	Qy 1405 tttggcagccaaagaaaagcatgaagaaagcctaagaactattgaggctctgaaaag 1464 	
2419 3220	_	Qy 1345 gaatgaggaagtaatggtggctgatgatctggaaagtgagaaagaa	
3160		Oy 1285 aaaaattcagcaagaacagagaatattattgattagatcaatggtttacagctacagct 1344	

ନ୍ଦି - ଜୁନ	GANANCACTCAGAAC	3880	DЬ
aaga	tgagtacatca	3073	Qy
AAGAAACCT 3879	ATATAAATC	3820	90
- 6		3013	Qy
AAAATTTGA 3819	ACTGAATGACACGTTAGCCAAAACTAACAGAGAATTATTAGATGTGAAGAAAAAA	3760	DЬ
tgtg	agtagcaca	2953	Qy
TAAAATGAC 3759	GAAGAAGATGAGTAATCAGTATGTGCCAGTTAAAACCCCATGAAGAGGTTAAAAT	3700	Дb
_	gaaaaagaccatgagtcatcagtatgtgcccgtgaaaacccatgaagagat	2893	Qγ
CACTAACTT 3699	GAAAAAATGTGGTGAAGACCAGGAGAAAATACACGCTCTCACATCTGAAAACACT	3640	Db
gat	attcact	2833	Qγ
STCTGAACTTAA 3639	ATAGCTCTGAAATCCAATATTGTTGAACTTAAGAAACAGCTC	3580	Db
: 12	aatgatggctctgaaatccaatatcactgaacttaagaagcagct	2773	Qy
ACATGAAAA 3579	CTTAAGTAAGGATGTAAGCCGCCTAGAAACTGTGTTTGTACCTCCTGAGAAACAT	3520	ф
асасдавав 2772	tttaagtaaaaatgtcagccgcctggaaactgtgttcatacctcccgagag	2713	Qy
AAATGACAG 3519	AACACAAAAATATACAGAAAAGAAGTTGGAAAATGGAGAAATTGCTACTGGAAAAT	3460	Db
laaatgccag 2712	gacacacaaatatacagaaaagaagttggaaatggagaagttgcttatgga	2653	Qy
TTTAGATGT 3459	AGACATGAAAAAGTCACATGATGCAATTATTGATGATGATCTTAATAGAAAAGCTTTTAGAT	3400	DЬ
· Q	agaaatgaaaaagtcacatgatgtaattgttgatgatttgaataaaaagct	2593	Qy
NAGTAAGTGA 3399	GCAAGCATAACTTAACAATTGAAATGAAAATCATTATGTTCCTTTAAAAGT#	3340	Db
agtg	taaataacttaacaactgaaatgaaaaatgt	2539	Qy
CCTCAAGGA 3339	AAATCAGACACTACAAAAGGAAATTGAAAAAGTTTATTTGGATAATAAGCTCCTCA	3280	뫄
0	;ttacaaaaggaaatcgaaaaggtctgcctg	2479	Qγ
TAACATTGAA 3279	GAGCAGATTAGAACAGGAAATCAGGAGAACTTGGGAAGAAGATCACTGAGTTAACATT	3220	Ъ
taacatcgaa 2478	cagattagagcagaagtcaggag	2419	Qy
AACAGGTTAA 3219	TGAGAATGTTAAGGCCAAGCTTGCTCAGCACGTCAAACCAGAGGAACATGAA	3160	Db

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        tgcacagggtcacatggatgaggatgtgcaggccgccttactgcagatcatacagatgcg
                                 aaaacaggccctcaatggcctttcccagctcacctatggaagtgggagtcccagcaagag 4392
                                                                                                                                                                                                                                                              TGCACAGGGTCACATGGATGAAGATGTTCAGGAGGCTCTGCTCCAGATCATACAAATGCG
                                                                                                            AAAACAGGCACTCAATGGCCTTTCCCAACTCACCTACAAGTGGGAACCCCACCAAGAG
                                                                                                                                                 TAAACAAATAGAAGCAAAAGATAATAAGATAACTGAACTGCTTAATGATGTGGAAAGATT
                                                                                                                                                          ACGATGTGATAAGTCCTTAACAACAATCACAGAGTTACAAAGAAGAATACAAGAATCTGC
                                                                                                                                                                                               acgatgtgacaaatccttaacaaccatcacggagctacagagaagaatacaggaatctgc
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                                                                                                                                                                                                                                   taaagatgagaaggaattgctccatttcagcatagagcaagaaatcaaagatcagcagga 4212
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RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S.,

Barna, N., Bastlen, V., Boguslavkiy, L., Bouchgalter, B., Brown, A.,

Camarata, J., Campoplano, A., Choepel, Y., Colangelo, M., Collins, S.,

Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S.,

Dodge, S., Faro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J.,

Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-pleirre, N.,

Hagos, B., Heaford, A., Horton, L., Hulme; W., Iliev, I., Johnson, R.,

Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T.,

Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P.,

Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K.,

McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V.,

Murphy, T., Naylor, J., Nayen, C., Norbu, C., Norman, C., H.,

O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K.,

Phunkhand, P., Pierre, N., Pollara, V., Raymond, C., Retta, R.,

Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M.,

Roy, A., Santos, R., Schauez, S., Schupback, R., Seaman, S., Severy, P.,

Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J.,

Travers, M., Travis, N., Tigillo, J., Vassiliev, H., Viel, R., Vo, A.,

Wilson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J.,

Zembek, L., Zimmer, A. and Zody, M.

Direct Submission

AL Research, 320 Charles Street, Cambridge, MA 02141, USA

On Mar 3, 2001 this sequence version replaced gi:12229508.

All repeats were identified using RepeatMasker html

http://ftp.genome.wshington.edu/RW/RepeatMasker html
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Center: Whitehead Institute/ MIT Center for Genom
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HTG: HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
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Homo sapiens chromosome 15 clone
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Sequencing vector: Plasmid; n/a; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Assembly Program: Phrap; version 0.960731 Consensus quality: 146524 bases at least 040 Consensus quality: 147238 bases at least Q30
                                                                                                                                                                                                                                      Center project name: L5158
Center clone name: 64_K_10
Center clone name: 54_K_10
                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www-seq.wi.mit.edu
Contact: sequence_submissions@genome
-----Project Information
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TTAACAAGTGAAGCAGCCTCAGGGAATCACAGACTAACCGAGGAACTGAAGGATCAGTTG
                                                                       CAGTGTACTTCCCCAGGTATACCAGCCCATATGCAAAGCAGATCTATGTTAAGACCTCTG 128225
                   ctgacaagtgatgcggccactgggaaccacaggctgatggaggaactgaaggatcagttg
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/clone_11b="RPCI-11 Human Male BAC"
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/db_xref="taxon:9606"
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                                       aagaagaagtgtgaagatataaatcaagaatttgtgaaaataaaagatgagaacgaaata
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Quality Assessment:
This entry has been annotated with sequence quality estimates computed by the Phrap assembly program.
All manually edited bases have been reduced to qual Quality levels above 40 are expected to have less to a lerror in 10,000 bp.
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Rowen, L., Madan, A., Qin, S., Abbasi, N., Baradarani, L., Birditt, B., Bloom, S., Dors, M., Dickhoff, R., Harrison, G., James, R., Lasky, S., Madan, A., Ratcliffe, A., Shaffer, T. and Hood, L.

Direct Submission
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Dors, M., Dickhoff, R., Flectwood, P., Harrison, G., Kaur, A.,
Nesbitt, R., Traicoff, R. and Hood, L.
Sequencing of human chromosome 15 D15S114-D15S115 region
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HOMO sapiens chromosome 15 clone
SEQUENCE, 19 ordered pieces.
ACUION7K
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This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

1 39368: contig of 39368 bp in length 39369 39468: gap of unknown length 43957 44056: gap of unknown length
                                                                                                                                                                                                                                             NOTE: This is a 'working draft' sequence. It currently consists of 19 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing vector: pUCIB; L08752 Chemistry: Dye-terminator Big Dye; 90% of rechemistry: Dye-primer Big Dye; 10% of reads Assembly program: Phrap; version 0.990399 Insert size: 150000; agarose-fp Quality coverage: 4.6x in Q20 bases; sum-of-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://chroma.mbt.washington.edu/msg_www
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Best Local Similarity 77.1
Matches 2311; Conservative
                                                                                                                                                        134858 CTGGCACACAAAGTGGCAGAATGCAAAGCTTTAGCATTAGAATGTGAAAGGGTCAAGGAG 134799
                                                                                                             1805 gattcagatgagcagataaagcaactagaagatgccttgaaagacgtgcagaagagagaatg 1864
                                                                                                                                                                          1745 ctggctcacaaggtggcggagtgcaaggccttagcattggaatgtgaaagggtgaaagag 1804
1925 ctgacaagtgatgcggccactgggaaccacaggctgatggaggaactgaaggatcagttg 1984
                                GATTCAGATGAACAGATAAAGCAATTAGAAGATGCATTAAAAGATGTGCAGAAGAGGATG 134739
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/db_xref="taxon:9606"
/db_xref="taxon:9606"
/chromosome="15"
/clone="RPI1-64K10"
/clone_11b="RPCI human BAC library 11"
/clone_11b="RPCI human BAC library 11"
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1. .155760
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95543: conclg of 6254 bp in length
95643: gap of unknown length
97002: conclig of 2259 bp in length
101825: conclig of 3823 bp in length
101925: gap of unknown length
10779: conclig of 5854 bp in length
107879: gap of unknown length
103178: conclig of 5854 bp in length
123178: gap of unknown length
129110: conclig of 5832 bp in length
129210: gap of unknown length
139129: gap of unknown length
13929: conclig of 5819 bp in length
139765: contig of 6636 bp in length
149865: gap of unknown length
141966: conclig of 1631 bp in length
141960: contig of 1631 bp in length
141960: contig of 1631 bp in length
155760: contig of 14164 bp in length
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77.5%;
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contig of 14017 bp in length
gap of unknown length
contig of 1954 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                       Score 1796.2; DB 2;
Pred. No. 0;
0; Mismatches 428;
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of 3499 bp in length
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unknown length
of 2457 bp in length
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3058	aagaagaagtgtgaagatataaatcaagaatttgtgaaaataaaagatgagaacgaaata	у 2999	δ
2998	gagattaaaactgccttgagtagcacattggataaaaccaatagagaattagtagatgtg	y 2939	Db
133599		b 133658	Qy
2938	gaaaacaatgatttgaaaaagaccatgagtcatcagtatgtgcccgtgaaaacccatgaa	y 2879	4d
133659		b 133718	60
2878	ctgtctgaacttaataaaaatgtggtgaagaccaagagaaaatatattcactcatgtct	y 2819	Qy
133719		b 133778	dd
2818	gagagacacgaaaaagaaatgatggctctgaaatccaatatcactgaacttaagaagcag	y 2759	Db
133779		b 133838	Qy
2758	atggaaaatgccagtttaagtaaaaatgtcagccgcctggaaactgtgttcatacctccc	у 2699	dq
133839		b 133898	VQ
2698 133899	aagctttcagatgtgacacacaaatatacagaaaagaagttggaaaatggagaagttgctt	y 2639 b 133958	ρ Q
2638	ttaaaagtaagtgaagaaatgaaaagtcacatgatgtaattgttgatgatttgaataaa	y 2579	P 04
133959		b 134018	
2578	aageteettacacaagtaaataaettaacaaetgaaatgaaa	y 2525	Db
134019		b 134078	dd
2524	gagttaacatcgaaaaatcagacgttacaaaaggaaatcgaaaaggtctgcctggataat	y 2465	д <b>О</b> У
134079		b 134138	
2464 134139	catgagcagctcaagagcagattagagcagaagtcaggagaacttgggaagaggatcact	y 2405 b 134198	р Q
2404	ttabagagagaacttgagaatttgaaggccaaactggctcagcacgtcabaccagagggaa	y 2345	Db
134199		b 134258	Qy
2344	gcaaaaaaattaatagatgtggaaagagaatatgaaagatcacttaatgaaactagacca	y 2285	Qy
134259		b 134318	db
2284 134319	attccagcagagaaatttgaaaacatgaagagcttgttatcaaatgaactgaacgagaag	y 2225 b 134378	Db Qy
2224	aggaageteactgagatggaaggecagttaaaggacttgteagecaagetggecetttet	y 2165	4d
134379		5 134438	40
2164	gagaataagcgactgcagaaggagttgagcatgtgtgaactggagcgagagaagagagga	7 2105	P 04
134439		5 134498	
2104	atcaaacaaaatgaaatgttagttgaagagtttaagagagatgagggcaagctgatggaa	2045	DP GA
134499		0 134558	
2044	abagacatgabagtgabatkogbaggtgcgtccgcagabgtggggabattgagbbaccab	1985	B 6
134559		134618	
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cagtgacccaactgcggcagatgctggagaatcagaagaactcctctgtgcccctggctg
                                                                                 tcgagacactcaaggaagaactgaaaactaagcagagatgttatgagaaagagcagcaga
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                                                                                                                                                                                                                            NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'- & 3'-end one pass sequencing and clone selection: Helix Research Institute (supported by Japan Key Technology Center
                                                                                                                                                                                                                                                                                                                                                                                             Submitted (16-FEB-2000) to the DDBJ/EMBL/GenBank databases. Takao Isogal, Helix Research Institute, Genomics Laboratory; 1532-3 Yang Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hri.co.jp, Tel:81-438-52-3951, Fax:81-438-52-3952)
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2 (bases 1 to 1628)
Isogai, T. and Otsuki, T.
Direct Submission
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Homo sapiens embryo, 10 weeks whole embryo, mainly head cDNA mRNA, clone_lib:HEMBAl clone:HEMBAl002997.
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to CENTROMERIC PROTEIN E.
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                                                                                                                                                                                                and Department of Virology,
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="HEMBA1002997"
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                                       cttatggaaaatgccagtttaagtaaaatgtcagccgcctggaaactgtgttcatacct
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   GAAGAGGTTAAAATGACACTGAATGACACGTTAGCCAAAACTAACAGAGAATTATTAGAT
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RDKTVLIEKSHEMERALSRKTDELNKQLKDLSQKYTEVKNKEKVEENAKQTSEILA
VQNLLQKQHYPLEQVEALKKSLNGTIENKLKEELKSMQRCYEKEQQTVTKLHQLLENQK
NSSVPLAEHLQIKEAFEKEVGIIKASL"
07 a 236 c 348 g 337 t
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/tissue_type="whole embryo, main1.
/note="cloning vector: pME18SFL3"
22. >1628
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Homo sapiens chromosome 1
SEQUENCE SAMPLING.
AC022466
AC022466.1 GI:6899523
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04-FEB-2000 15q23, LOW-PASS

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                         Submitted (04-FEB-2000) Multimegabase Sequencing of Washington, PO BOX 357730, Seattle, WA 98195,
                                                      and Hood, L.
Direct Submission
                                                                              2 (bases 1 to 83775)
Rowen, L., Madan, A., Oin, S., Abbasi, N., Baradarani, L., Birditt, B. Bloom, S., Dors, M., Dickhoff, R., Fleetwood, P., Harrison, G., James, R., Kaur, A., Madan, A., Owen, M.P., Ratcliffe, A., Shaffer, T.
                                                                                                                                              and Hood, L. Sequencing of human chromosome 15 D15S146-D15S117
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

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Center code: UWMSC

site: http://chroma.mbt.washington.edu/msg\_www

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NOTE: This record contains 96 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is made and a ma
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Chemistry: Dye-terminator Big Dye;
Chemistry: Dye-primer Big Dye; 108
Assembly program: Phrap; version 0.
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contig of 875 bp in 10
gap of unknown length
contig of 859 bp in 10
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Pred. No. 3.9e-105;
0; Mismatches 144;
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g of 859 bp in le
f unknown length
g of 861 bp in le
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g of 808 bp in le-
f unknown length
g of 871 bp in le-
g of 878 bp in le-
g of 868 bp in le-
f unknown length
g of 868 bp in le-
g of 868 bp in le-
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g of 857 bp in le
f unknown length
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f of 860 bp in le
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RESULT 10
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CCAGAGACAAACAAAACAGAACTGCCCTCATGCTAGGTTGCGAATATGGTTGCAGAGATG
                                                             CCCB9819191899CCB8CB8114TG1CB8CT9CT981B9RB9RB9RB9RB9RB8TATT8ATT
                                                                                                                                          accatggggcctcggtgaatgccaaagatgtagatgggcggacaccacttgttctggcta
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; 1 (bases 1 to 441)
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/db_xref="taxon:9606"
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Pred. No. 6.6e-60;
D; Mismatches 36;
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Catarrhini; Hominidae;
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G36947/c
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          gaggcaaagaagagaaagctcgtggaggaaaatgccaagcagacttctgagatc 3640
 GAAGTAAAGTATGTGAAAGAAGAAGCTAGTAGAAGAAAATGCCAAACAGACTTCTGAGATA 359
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SHGC-56623 Human Homo
G36947
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Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: myers@shgc.stanford.edu
Primer A: ATGCTCTGCCAGGGGTACAG
Primer B: GGAACGAGGTTGAGGCTCTG
STS size: 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Richard M. Myers
Stanford Human Genome Center (SHGC)
Stanford University School of Medicine
Department of Genetics, M-344, Stanford,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Myers, R.M.
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Mammalia; Eutheria;
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PCR Cycles:
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                                                                                                                                                                                                                    with primer pairs derived from N69830 Location/Qualifiers
                                                                                                               complement(298..317)
92 c 65 g
                                                                                                                                      /clone_lib="Human" 151, .317 151, .170
                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="15"
                                                       6.4%;
85.9%;
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Primates;
                                            Score 302.8;
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RESULT 12
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Best Local Similarity 91.0
Matches 313; Conservative
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                                                                  tagatgggcggacaccacttgttctggctacccagatgtgtaggccaacaatatgtcaac
                                                                                                                 TTGGAATCATAAAAGCCAGCTTGAGAGAAAAGGAAGAAGAAAGCCAAAACAAAATGGAAG 59
tgctaggatgcgagtatggttgcaaagatgcagtagaagtcttaatcaaaaacggcgctg
                                    Sequence
AX071367
                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 371)

Williams, L.T., Escobedo, J., Innis, M.A., Garcia, P.D., "Klinger, J., Kassam, A., Reinhard, C., Randazzo, F., Kennedy, G.C., Pot, D., Lamson, G., Drmanac, R., Crkenjakov, R., Drmanac, S., Dickson, M., Labat, I., Leshkowitiz, D., Kita, D., Garcia, V. and Strache-Crain, B.
                                                                                                                                                                                                                                                                                                                          Human genes and gene expression products patent: WO 0102568-A 1839 11-JAN-2001; CHIRON CORPORATION (US); HYSEQ, INC. (US)
Location/Qualifiers
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                                                                                             ACCESSION
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                                                                                                                                                                                                                                                                                                                                                                    acgtgaccttgctggacgcccttggccatgacagt 1060
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AC009269
AC009269.6 GI:13194974
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Patent: WO 0102568-A 1830 11-JAN-2001;
CHIRON CORPORATION (US); HYSEO, INC. (US)
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Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 401)
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Pred. No. 5.2e-43;
                                                                                                            clone RP11-138H8, complete sequence
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JOURNAL
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Baker, J., Baldwin, J., Barna, N., Beckerly, R., Benn, J., Brown, A.,
Baker, J., Baldwin, J., Barna, N., Beckerly, R., Benn, J., Brown, A.,
Castle, A., Cerny, J., Collangelo, M., Collins, S., Collymore, A.,
Castle, A., Cerny, J., Collangelo, M., Collins, S., Collymore, A.,
Cooke, P., Dehrellano, K., Depayre, E., Devon, K., Dewar, K.,
Donelan, L., Doyle, M., Ferreira, P., Fitzhugh, W., Forrest, C.,
Funke, R., Gage, D., Galagan, J., Gardyna, S., Gilbert, D., Grant, G.,
Funke, R., Gage, D., Galagan, J., Gardyna, S., Gilbert, D., Grant, G.,
Hagos, B., Heaford, A., Horton, L., Howland, J.C., Jones, C., Kann, L.,
Karatas, A., Lehoczky, J., Houland, J.C., Jones, C., Kann, L.,
Karatas, A., Lehoczky, J., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McKernan, K., McKernan, K., McLaughlin, J.,
Marquis, N., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, M., McGurk, A., McKernan, K., McLaughlin, J.,
Marquis, N., McEwan, M., McKernan, K., Mc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (24-MAR-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 4, 2001 this sequence version replaced g1:12745100. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
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1 (bases 1 to 172850)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 15, clone RP11-138H8
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                                                                                                                                                                                                                                                                                                                  Center project name:
Center clone name: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center code: WIBR
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/clone_lib="RPCI-11 Human Male BAC"
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                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                           clone name: 138_H_8
                                                                                                                                                                                                                 .172850
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repeat\_region

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complement(12563. .13020)
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Best Local Similarity 79.6
Matches 351; Conservative
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                                                         147446 ATGAAGGCGGAGAAGGATCCTGAAGACGAAGAAAATATCGTTAGAGATCCAAGCTAAGTG
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21944. .
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 -TGAGGGACTGAGTCACTTG
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DEFINITION
ACCESSION
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KEYWORDS
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ORGANISM
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ORIGIN
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AUTHORS
Search completed: April 10, 2002, 16:06:01 Job time: 4400 sec
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Source
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AX192628
LOCUS
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Best Local Similarity 92.4%;
Matches 242; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
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                                                                                                      400
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                                                                        ctggctgcaaagtatgggcatg 692
                                                           CTGGCTGCTAAGTATGGACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          methods for their use Patent: WO 0149716-A 195 12-JUL-2001; CORIXA CORPORATION (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 421)

Xu,J., Lodes, M.J., Secrist, H., Benson, D.R., Meagher, M.J., Stolk, J.A., King, G.E., Wang, T. and Jiang, Y.
Compounds for immunotherapy and diagnosis of colon cancer and mathematical for the colon cancer and mathematical for the colon cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX192628 421 bp DNA
Sequence 195 from Patent W00149716.
AX192628
AX192628.1 GI:15210591
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                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
101 c 125 g 86
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                                                                                                                                                                                                                                                                                                      Score 230; DB 6; Length 421; 
Pred. No. 6.6e+37; 
0; Mismatches 20; Indels
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Minimum
Maximum
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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                 1504.4
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Match
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1: /SIDS2/gcgdata
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Copyright (c) 1993 - 2000 Compugen Ltd
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19593.875 Million cell updates/sec
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                            Human cDNA sequence
Human cDNA clone (
Human secreted exp
Colon tumour relat
Novel human polynu
EST clone DU410.
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                                                                                                                          Human myosin heavy
Sequence of C3Vs g
Novel human polynu cDNA encoding huma
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AAV83134
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                                                                                                                                                                                                                                                                                                Homo
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	AAF90586	22	1797	1.4	67.4	45
Human secreted pro	AAX41086	20	356	1.4	68.2	44
Human secreted pro	AAC27957	21	355	1.4	68.2	43
Plasmodium falcipa	AAA70212	21	1998		0	42
Human colon cancer	AAH33568	22	653	1.5	•	4.1
Plasmodium falcipa	AAA70105	21	5940		7	40
DNA encoding Leuco	AAQ87587	16	1686		75.2	39
Human cDNA clone (	AAH06546	22	719			38
	AAA70099	21	3579		79	37
Base sequence of t	AAX33184	20	7996		ū	36
	AAX33180	20	7797		85.2	35
Base sequence of t	AAX33182	20	7372	٠	85.2	34
Base sequence of t	AAX33181	20	6644	•	85.2	33
Chicken leucocytoz	AAT05868	17	3399		87.6	32
Human polynucleoti	AAI59207	22	1712	•	131	31
	AAZ24394	20	2407	٠	137.2	30
	AAF58255	22	938		143.4	29
Oligonucleotide D2	AAF58262	22	936		143.4	28
	AAF58259	22	936	٠		27
	AAF58257	22	936	٠	143.4	26
	AAF58254	22	936	•	•	25
	AAF58252	22	936	•	•	24
Oligonucleotide D1	AAF58255	22	938	٠	144.6	23
	AAF58262	22	936	٠		22
	AAF58259	22	936		144.6	21
	AAF58257	22	936	٠	•	20
Oligonucleotide D1	AAF58254	22	936	٠	144.6	19
Oligonucleotide D1	AAF58252	22	936		144.6	18
Human cDNA sequenc	AAH16256	22	2740		147	17
secreted	AAA41967	21	279		199.8	16
secret	AAC27789	21	361		210	15
Human ss_79 gene,	AAH22255	22	1434	4.7	221.6	14
tumour	7	22	421		230	13
Colon tumour relat	AAI28653	22	421	4.9	230	12

## ALIGNMENTS

ВP

(first entry)

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Agostino MJ, Jacobs K, Racie LA, Spaulding V,
                                                                   23-APR-1998;
25-APR-1997;
                                        (GEMY ) GENETICS INST INC.
                                                                                                            24-APR-1998;
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97US-0845296
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Best Local Similarity 85.3
Matches 1981; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The nucleotide sequence (NS) of the full-length protein-coding sequence of clones c125_4 (AAV83132), da228_6 (AAV83133), du410_5 (AAV83134), eh80_1 (AAV83135), er359_1 (AAV83136), fh123_5 (AAV83137), fm60_1 (AAV83138) or fr473_2 (AAV83139), (all clones are deposited as ATCC 98415) and the proteins they encode are predicted to have blological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals for example, tumour suppression/invasion activity, immune system boosting activity. The polynucleotides are also believed to be useful for gene therapy. This polynucleotide was isolated from a human foetal brain cDNA library.
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/product= "myosin heavy chain
/note= "claimed in claim 6"
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The invention by expression

relates to a method for diagnosing a of a human cancer associated antigen

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Claim

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CC full-length cDNAs defined in the specification. Where a primer set comprises (a) an ollgo-dT primer and an oligonucleotide comprises (b) an ollgo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of collgonucleotide comprises at least 15 nucleotides; or (b) a combination cof an oligonucleotide comprises at least 15 nucleotides; or (b) a combination cof an oligonucleotide comprises at least 15 nucleotides; or (b) a combination complementary strand of a polynucleotide which comprises a 5'-end sequence complementary to a complementary of the complementary to a conjugate which comprises a 1'-end sequence complementary to a collection of complementary and sequence is selected from those defined in the specification. The primers are useful for synthesising polynucleotides, comparison the complementary full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs and methods. AAH03166 to AAH13628 and
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27-AUG-1999;
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Matches Query Match Best Local

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aataagctcctcaaggagcaagcacataacttaacaattgaaatgaaaaatcattatgtt

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CC full-length cDNAs defined in the specification. Where a primer set to the complementary strand of a polynucleotide which complementary to the following sequences defined in the specification, where the cc oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprises at least 15 nucleotides; or (b) a combination co f an oligonucleotide comprising a sequence complementary to the cc complementary strand of a polynucleotide which comprises a 5'-end cc polynucleotide which comprises a 3'-end sequence complementary to a conjuncted comprises a 3'-end sequence, where the coligonucleotide comprises a 3'-end sequence complementary to a coligonucleotide comprises a 3'-end sequence, where the coligonucleotide comprises a 3'-end sequence, where the coligonucleotide comprises a 1'-end sequence, where the coligonucleotide comprises a 3'-end sequence, where the coligonucleotides and classification and/or diagnosis of the absorbation of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and CL AAH3633 to AAH18742 represent human callo sequences; and AAH3629 to AAH13632 capresent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
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Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention describes primer sets for synthesising full-length cDNAs defined in the specification. Where a prime {\sf T}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer sets for synthesizing polynucleotides, particularly in full-length cDNAs defined in the specification, and for the and/or diagnosis of the abnormality of the proteins encoded
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, Sugiyama
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ı A, Nagai K
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                                                                                                                                                                                                                                                                                                                                                                                       Human; mouse; chicken; rat; secreted expressed sequence tag; sEST; expressed sequence tag; SEST; probe; chemotactic; proliferative; immunomodulatory; haematopoictic; chemotanctic; analgesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; antiviral; antidiabetic; antiasthmatic; vulnerary; antiparkinsonian; cerebroprotective; anticonvulsant; antidepressant; antidepressant; centerbroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; central nervous system disorder; Alzhelmer's disease; stroke; parkinson's disease; Huntington's disease; coagulation disorder; haemophilis; thrombosis; inflammatory disorder; Crohn's disease;
                                                                                                                                                                                                                                                                                                                         Homo
(GEMY ) GENETICS INST INC
                                                                       15-OCT-1998;
                                                                                                                                 15-OCT-1999;
                                                                                                                                                                                                                                                         WO200021991-A1
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                                                                   98US-0104436
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                                                                                                                                                                                                                                                                                                                                                                          depression; psortasis;
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CC AAA43426 to AAA45925 represent specifically claimed secreted expressed CC sequence tags (sESTs), isolated from human, mouse, chicken and rat CC tissue sources. The sESTs can have a range of activities depending on CC the tissues they were isolated from. The activities include: CC chemokinetic; proliferative; immunomodulatory; haematopoletic; chemokinetic; analgesic; haemostatic; thrombolytic; antifinflammatory; cc chemokinetic; antibacterial; antifungal; antiviral; antifinflammatory; cc cytostatic; antibacterial; antifungal; antiviral; antifinflammatory; cc antiasthmatic; vulnerary; antiulcer; osteopathic; neuroprotective; cc anticonvulsant; and antidepressant. The sESTs can be used for gene ct therapy and in vaccines. The sESTs are useful as probes for the convolvant; and isolation of full-length cDNAs and genomic DNA concludes which correspond to the SESTs. Proteins encoded by the sESTs can be useful in assays for determining biological activity and raising cantibodies. They may be useful for treatment of autoimmune disorders (multiple sclerosis, insulin dependent diabetes), allergic conditions cathoporosis, osteopathritis, central nervous system disorders (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, cc (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation continued is orders (haemaphilla, thrombosis), inflammatory disorders (Crobn's disease), tumours, bacterial, fungal or viral infections, depression and continued continued in the procession and continued in th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jacobs K, F
         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Isolated polynucleotides, and encoded proteins, comprising secreted expressed sequence tags (sESTs), useful for treating various disorders such as autoimmune, infectious, and central nervous system disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Page 616; 803pp; English.
                                                       exemplification of the present invention.
   571 BP; 246 A;
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Treacy M,
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80 C; 125 G; 120 T; 0 other;
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Local Similarity Conservative 9.7%; 0 Score 460.2; DB 21 Pred. No. 4.9e-100; Mismatches DB 21; Indels Length 0; Gaps 0,

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195 135 agattcagaatactaaacaagcgttaaaaaaaattagagactcgggaggtggttgatttgt tgagagaaaaggaagaagaagccaaaaccaaaactgaagaggtctccaaactccagtctg aggitcagaatactaaacaagcattaaaaaaattagagactagagaggtagitgacitgi tgagagaaaaggaagaagaaagccaaaacaaaatggaagaagtctccaaacttcagtcgg 4019 194 254

315 aggaaatatctgcaaaagatgagaaggaattactgcatttcagcattgagcaagaaatta aggaactgtctgctaaagatgagaaggaattgctccatttcagcatagagcaagaaatca tggccaatctgaatagaaagtatgaggaagtatgtgaggaagtttttgcatgccaaaaaga tggccaatctgaataggaagtatgaggaagtatgtgaggaggttttgcatgccaaaaaga ctaaatataaagcaacaaaagtgatttggagacacagatttctagcttaaatgaaaaat CGAAATATAAAGCAACGAAAAGCGATTTGGAGGACACAGATTTCCGACTTAAACGAAAAT 4079

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                associated with inappropriate colon tumour associated protein (TCAP)
CC expression, such as colonic cancer. For example, (I) and (II) may be
cused to treat disorders associated with decreased expression by
cc used to treat disorders associated with decreased expression by
cc rectifying mutations or deletions in a patient's genome that affect the
cc activity of TCAPs by expressing inactive proteins or to supplement the
cc produce the TCAP proteins, by inserting the nucleic acids into a host
cc produce the TCAP proteins, by inserting the nucleic acids into a host
cc complementary sequences may also be used as DNA probes in diagnostic
cc complementary sequences may also be used as DNA probes in diagnostic
cc complementary sequences of similar nucleic acids in assays to detect and
cc quantitate the presence of similar nucleic acids in samples, and
cc also be used as antigens in the production of antibodies against TCAPs
cc and in assays to identify modulators of TCAP expression and activity.
cc Anti-(I) antibodies and antagonists may also be used to down regulate
cr as diagnostic agents for detecting the presence of TCAPs in samples.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
19-MAY-2000;
29-JUN-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200149716-A2
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immunogenic; gene therapy; vaccine; colonic cancer; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 25; Page 308; 472pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes colon tumour associated proteins (I) and the polynuclectides (II) that encode them. (I) have cytostatic activity. (I) and (II) can be used in gene therapy and vaccine production. (I) and (II) may be used in the prevention, diagnosis and treatment of diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-441847/47.
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2000US-0504629.
2000US-0519444.
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Jiang Y;
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      for detecting
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   the presence of TCAPs
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                  Williams LT,
Reinhard C, R
Crkenjakov R,
Kita D, Garci
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                                                                                                                                                                                                                                                                        AAF66083;
                                                                                                                                                                                                                                                                                           AAF66083 standard; cDNA; 371
                                                                                                                                                                                                   Human; cytostatic; gene therapy;
breast cancer; lung cancer; canc
                                                                                             02-JUL-1999;
02-JUL-1999;
                                                                                                                                            11-JAN-2001
                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                 Novel human polynucleotide,
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                                                                 (CHIR ) CHIRON CORP
(HYSE-) HYSEQ INC.
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                    Garcia V,
                    Randazzo F,
R, Drmanac S,
rcia V, Jones
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                                                                                                                           2000WO-US18374
                                             Escobedo J,
                                                                                              99US-0142310
99US-0142311
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91.0%;
                   Kennedy GC,
Dickson M,
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                                                                                                                                                                                                      cancer
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                     edy GC, Pot D,
kson M, Labat I,
Strache-Crain B;
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                                                                                                                                                                                                              colon cancer; prostate cancer;
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                             Garcia PD, Klinger J,
Pot D, Lamson G, Dri
Labat I, Leshkowitiz
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 313
                                                 Expressed sequence tag; secreted protein; haematopolesis regulator; tissue growth; activin; inhibin; tumour invasion suppressor; EST; he chemotaxis; chemokinesis; haemostasis; gene therapy; thrombolysis; receptor; ligand; anti-inflammatory; tumour inhibitor; ds.
   WO9845437-A2
                            Homo sapiens.
                                                                                                                                 EST clone
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f polynucleotides for diagnosing a cancerous state of
cell and detecting cancer, particularly of the colon
comprises 3351 human polynucleotide sequences -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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No. 1.4e-60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence represents an expressed sequence tag (EST), and is a polynucleotide of the invention. The polynucleotides of the invention are all secreted EST sequences isolated from a variety of human tissue sources. The EST sequences and proteins encoded by them are predicted to treating, preventing or ameliorating medical conditions in humans and animals, although no supporting data is given. Suggested activities include nutritional activity, immune stimulating or suppressing activity haematopoiesis regulating activity, tissue growth activity, haemostatic and thrombolytic activity, receptoryligand activity, anti-inflammatory activity, cadherin/tumour invasion suppressor activity, tumour inhibitio activity. The EST sequences are also stated to be useful for gene
                                   3306
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Racie LA, Spaulding
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tcagctttgaggagtgcgagagaaatttaaagcaacagagctcga
                   tcagcttggaagagtgtgagagaaatttaaagccactgagaaaga
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                                                           cccagaagaaggagctcgacacaatacaagaatgcattaaggtaaaatatgccccaattg
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Treacy M;
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                                                                                                                                                           Query Match
Best Local Similarity
Matches 294; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Williams LT,
Reinhard C, F
Crkenjakov R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Library of polynucleotides for diagnosing a cancerous state of mammalian cell and detecting cancer, particularly of the colon prostate, comprises 3351 human polynucleotide sequences -
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(HYSE-) HYSEQ INC.
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02-JUL-1999;
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tagacgggcggacaccacttgttctggctactcagatgagtaggccaacaatatgtcaac
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Garcia
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99US-0142311.
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87.8%;
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Dickson M, Labat I,
LW, Strache-Crain B;
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          CC Sequences AAA77722-A78199 represent 478 cDNAs encoding proteins or CC portions of proteins which are associated with human colon tumour so the invention also specifically discloses 8 human colon tumour proteins CC (AAB11897-B11904). The nucleic acids, the polypeptides they encode, and CC antigen presenting cells (APCs, preferably dendritic cells) expressing CC such polypeptides may be used in vaccines that target tumour cells, CC especially colon tumour cells, thereby inhibiting the development of CC cancer. T-cells specific for the polypeptide expressed by the APC are CC used to remove tumour cells from biological samples, especially blood or CC controls thereof. The sample or the isolated T-cells specific for the polypeptide can then be used to inhibit cancer development. CD4+ and/or CC collect acid of the invention, or an APC expressing such a polypeptide, coloned and then administered back to the patient to inhibit cancer coloned and then administered back to the patient to inhibit cancer coloned and then administered back to the patient to inhibit cancer coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the expression level coloned and the polypeptides may be used to determine the such the mean to the polypeptides and antibodies and antibodies and antibodies are processed to the polypeptides and antibodies and antibodies are polypeptides.
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02-DEC-1999;
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DB; AAB11903.
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Best Local Similarity 92.4
Matches 242; Conservative
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29-JUN-2000;
28-AUG-2000;
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10-JAN-2000;
15-FEB-2000;
06-MAR-2000;
  Claim
                    Colon tumor prevention,
                                                                     King
                                                  WPI; 2001-441847/47
                                                                                  Хu J,
                                                                                                    (CORI-) CORIXA CORP
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                                                                                                                                                                                                                                                                                       Human; Immunotherapy; diagnosis; colon cancer; colon tumour;
immunogenic; gene therapy; vaccine; colonic cancer; ss.
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                                                                    Lodes MJ,
E, Wang T,
Page 187; 472pp; English
                    associated proteins and diagnosis and treatment
                                                                                                                      2000US-0480321
2000US-0504629
2000US-0519444
2000US-0575251
2000US-0609448
2000US-0649811
                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                    .99US-0476296.
                                                                    Secrist H,
Jiang Y;
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Pred. No. 3.3e
0; Mismatches
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                                                                                Benson
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No. 3.3e-45;
Lsmatches 20;
                  nucleic acids useful for of colonic cancer -
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                                                                                DR,
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                                                                              Meagher MJ,
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The present invention describes colon tumour associated proteins (I) and (II) can be used in gene therapy and vaccine production. (I) and (II) may be used in the prevention, diagnosis and treatment of diseases (C associated with inappropriate colon tumour associated protein (TCAP) C expression, such as colonic cancer. For example, (I) and (II) may be used in the prevention, diagnosis and treatment of diseases (C associated with inappropriate colon tumour associated protein (TCAP) (C expression, such as colonic cancer. For example, (I) and (II) may be used to treat disorders associated with decreased expression by (C rectifying mutations or deletions in a patient's genome that affect the activity of TCAPs by expressing inactive proteins or to supplement the CC patients own production of them. Additionally, (II) may be used to (C produce the TCAP proteins, by inserting the nucleic acids into a host (C cell culturing the cell to express the protein. (II) and its (C culturing the cell to express the protein assays to detect and (C quantitate the presence of similar nucleic acids in samples, and (C and) assays to identify modulators of TCAP expression and activity. The anti-(I) antibodies against TCAPs (C anti-(I) antibodies and antagonists may also be used to down regulate (e.g. by enzyme linked immunosorbant assay (ELISA)). Ani28460 to Ani29512 and AAM24494 to AAM24523 represent nucleotide and amino acid sequences (C given in the exemplification of the present invention.
   Sequence 421 BP;
109 A; 101 C; 125 G;
86 T; 0 other;
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Length 421;

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ARESULT 1
AAI29UT AAI29UT AAI29UT AAI2
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Best Local Similarity
Matches 242; Conserv
                                    12-JUL-2001
                                                                                                WO200149716-A2
                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                          Human;
                                                                                                                                                                                                                                                                                                                Colon tumour related determined cDNA sequence for clone CT607
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atccttatacatggagttgatattacaaccagtgacactgcagggagaaatgctcttcac
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                                                                                                                                                                                                                     immunotherapy; diagnosis; colon cancer; colon tumour;
genic; gene therapy; vaccine; colonic cancer; ss.
                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
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Pred. No. 3.3e-45;
); Mismatches 20
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CC the polynucleotides (II) that encode them. (I) have cytostatic activity.

CC (I) and (II) can be used in gene therapy and vaccine production. (I) and

CC (II) may be used in the prevention, diagnosts and treatment of diseases

CC associated with inappropriate colon tumour associated protein (YCAP)

CC expression, such as colonic cancer. For example, (I) and (II) may be

CC used to treat disorders associated with decreased expression by

CC rectifying mutations or deletions in a patient's genome that affect the

CC produce the TCAP by expressing inactive proteins or to supplement the

CC produce the TCAP proteins, by inserting the nucleic acids into a host

CC complementary sequences may also be used as DNA probes in diagnostic

CC polymerase chain reaction (PCR) and hybridisation assays to detect and

CC quantitate the presence of similar nucleic acids in samples, and

CC therefore which patients may be in need of restorative therapy. (I) may

CC and in assays to identify modulators of TCAP expression and activity.

CC TCAP expression and activity. The anti-(I) antibodies may also be used to

CC as diagnostic agents for detecting the presence of TCAPs in samples

CC and AAN24523 represent nucleotide and amino acid sequences

CC alven in the examplification of the present on the present on the present on the present of TCAPs in samples
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Best Local Similarity
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29-JUN-2000;
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ctggctgctaagtatggacatg
              ctggctgcaaagtatgggcatg
                                                         atccttatacatggagttgatattacaaccagtgacactgcagggagaaatgctcttcac
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                                                                                                                                                                                                                                                                                                                                                                                                          exemplification of the present invention
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                                                                                                                                                                                                                                                                                                                                                                             109 A; 101 C;
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92.48;
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                                                                                                                                                                                                                                                                                                                   Score 230; DB 22;
Pred. No. 3.3e-45;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acids useful of colonic cancer -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tumour associated proteins (I) and them. (I) have cytostatic activity.
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                                                                                                                                                                                                                                                                                                                                 Length 421;
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cardiovascular activity, and can be used in the cardiovascular activity, and can be used in the cardiomy diagnosis and treatment of diseases associated with cardinapropriate anglogenesis. The polypeptides may also be used as antigens cin the production of antibodies against them and in assays to identify modulates of their expression and activity. The antibodies and cardivity and againsts the antibodies and activity can design that may also be used to down regulate expression and activity can modulate angiogenesis. The antibodies may also be used as diagnostic and modulate angiogenesis. The antibodies may also be used as diagnostic can modulate angiogenesis. The antibodies may also be used as diagnostic can modulate angiogenesis. The antibodies may also be used as diagnostic can be seen that may be prevented, diagnosed and/or treated by the above concludes include, for example vascular tumours, proliferative tumours, proliferative tumours, proliferative conclude, for example vascular tomours, proliferative tumours, can associated with neovascularisation, restenosis subsequent to balloon can associated with neovascularisation, restenosis subsequent to balloon can angioplasty, scar tissue over production, peripheral vascular disease, hypertension, inflammatory vasculatides, Reynaud's disease and capperfusion injury, angina, myocardial infarctions, chronic heart conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure.
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13-APR-2000;
31-OCT-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; differentially expressed gene; angiogenesis; diagnosis; angiogenic disorder; wound healing; cancer; cardiovascular; psoriasis; vascular tumour; proliferative tumour; proliferative vitreoretinopathy; rheumatoid arthritis; Crohn's disease; atherosclerosis; endometriosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 18; 182pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               treating e.g. vascular tumors, ath subsequent to balloon angioplasty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Differentially expressed genes involved in angiogenesis, useful for treating e.g. vascular tumors, atherosclerosis and/or restenosis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in angiogenesis (I), and the polypeptides that encode them (cardiovascular activity, and can be used in the modulation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CURA-)
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                                                                  macular degeneration and osteoporosis. to AAB98325 represent sequence used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURAGEN CORP
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2000US-0196802.
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Sequence 1434 BP; 430 A;

355 C;

332 G;

314 T; 3 other

Similarity

4.7%;

Score 221.6; DB: Pred. No. 6.2e-43

DB 22;

Length

1434;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              422 aagancagacagcagcagattggaacaaatacgatgaccgattgatgatgagcagcagaa
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                                                                                                                                   sapiens
                                                                                                                                                                              therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gacaatctggacattctaaccttact 1107
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Matches 230
                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA ilbraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intext 5' ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain upstream regulatory sequences and to design
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 361 BP; 112 A; 75 C; 89 G;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New nucleic acid that is a 5' expressed sequence tag (5' I obtaining cDNAs and genomic DNAs that correspond to 5'ESTs diagnostic, forensic, gene therapy and chromosome mapping
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les 230; Conserv
                 aaaacagg 955
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                                                                         ggccaacaatatgtcaactgctgatagatagaggggcggatattaattccagagacaaac
                                                                                                                   tgttgaatgccaaagatgtagacgggcggacaccacttgttctggctactcagatgagta
                                                                                                                                                                                               tgatgcagctatggcagactgtccttctagcatacagctgctctgcgaccatggggcctc
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         Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
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3: //cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: //cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: //cgn2_6/ptodata/2/ina/CTUUS_COMB.seq:*
5: //cgn2_6/ptodata/2/ina/Dackfiles1.seq:*
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RESULT 2
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                                                             CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/710,561
FILING DATE: 19-SEP-1996
ATTORNEY/AGENT INFORMATION:
NAME: COLLINS, John M.
REGISTRATION NUMBER: 26,262
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08931999
Patent No. 6043219
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 2.2%; Score 103.2; DB 1; Best Local Similarity 9.8%; Pred. No. 5.4e-16; Matches 45; Conservative 255; Mismatches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                 APPLICANT: landolo, John J.
APPLICANT: Crupper, Scott S.
TITLE OF INVENTION: Broad Spectrum Chemotherapeutic Peptide
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hovey, Williams, Timmons & Collins
STREET: 2405 Grand Boulevard, Suite 400
CITY: Kansas City
STATE: Missouri
                                        REFERENCE/DOCKET NUMBER: 25
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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                         TELEPHONE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
6458 GCAAAAACAAACACGCAAAAGGGCAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: DNI
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                            6218
                                                                                                                                                                                                                                                                                                                                     6038
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LENGTH: 6755 base pairs
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STRANDEDNESS: double
                   agagaagctcgtggaggaaaatgccaagcag
                                           taagaatgttcacattgagaattcttatgaaacagaaagagcattaagcagaaaaacaga
                                                                                                                                                                                   agagotgaacagataaaagacotgttgcagaaatacacagaggcaaagaaggagaa
                                                                                                                                      caagcaagagaatgacaagttaaagaaggagatcctcactcttcagaaggatctaaagga
                                                                                                                                                                                                  agaacagctatcccagcagacacagaagtataataccagtgaagaagaggccaagaagtg
                                                                                                                                                                                                                                 gattgcagcccagaagagagagctcgacacgatacaggaatgcatcaagctaaaatatgc 3297
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Pred. No. 0.00019;
0; Mismatches 425; Indels
                       3628
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US-09-188-930-257

RESULT

3477

6277 3417 6217

6157

6097

3177 5977

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US-08-676-967-2

(Sequence 2, Application US/08676967)

(Patent No. $747317)

(GENERAL INFORMATION:

APPLICANT: COLLINS, KATHLEEN

TITLE OF INVENTION: Human Telomerase

NUMBER OF SEQUENCES: 10
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; ORGANISM: Mouse
US-09-188-930-257
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 257
LENGTH: 3516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 1.2%;
Best Local Similarity 46.8%;
Matches 176; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 257, Application US/09188930A Patent No. 6150502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Watson, James D.
APPLICANT: Strachan, Lorna
APPLICANT: Strachan, Matthew
APPLICANT: Onrust, Rene
APPLICANT: Murison, James Greg
APPLICANT: Murison, James Greg
TITLE OF INVENTION: Compositions Isolated From
TITLE OF INVENTION: and Methods For Their Use
FILE REFERENCE: 11000.1011c1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/188,930A CURRENT FILING DATE: 1998-11-09
COUNTRY: USA
COUNTRY: USA
ZIP: 94104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1333 ctycacctygctytygyagyccygacagyagygytytytcaagtygctyctycttaacaat 1392
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                                                                                                               STREET: 200 CC
CITY: San Francisco
STATE: CA
                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         gacgtgaccttgctgg 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gtagatgggcggacaccacttgttctggctacccagatgtgtaggccaacaatatgtcaa
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                                                                                                                                                                        E: Science & Technology Law Group 268 Bush Street, Suite 3200
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Pred. No. 0.00024;
0; Mismatches 200;
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ATTORNEY/AGENT INFORMATION:
ANAME: OSMAN Ph.D., Richard A
REGISTRATION UNMBER: 36,627
REFERENCE/DOCKET NUMBER: UCB96
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)343-4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (415)343-4342 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
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584 AYAARGAYACNCARWSNGTNWSNGCNATHGGNGARGARAARWSNCAYGARWSNAARCAYC
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                                                   884 SNATHGAYGAYGGNGARGARYTNGCNCARWSNGAYACNWSNACNGARGARCARGARGAYA 943
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TOPOLOGY: lin
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                                                                                                                                                                                                                                                                                                                                                                                                                       tattaaaaagaaatctggagaacactcagaaccaagtaaaagctgagtacatcagcctaa 3116 ; | | ; | | ; | | ; | | ; | | ; | |
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                                                                              taaaagaacagctatcccagcagacacagaagtataataccagtgaagaagaggccaaga 341
                                                                                                                      CNGCNCCNGCNAARWSNWSNGAYCAYWSNGARGARGAYWSNGAYYTNGARGARWSNGAYW
                                                                                                                                                    AYGAYGAYGAYGAYGAYGARGARGAYGGNGTNTTYGAYGAYGARGAYGARGARGARG
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ATTORNEY/AGENT INFORMATION:
NAME: Osman ph.D., Richard A
REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: UCB96
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)343-4341
TELEPHONE: (415)343-4342
TELEPHONE: (415)343-4342
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Patent No. 5770422
GENERAL INFORMATION:
               2937
                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 2277 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                               344
                                                                                                                                                                 284 SNGARTGYCCNAARAARGARCCNAARGCNAARAGCNAARGTNGCNGAYAARAARGCNM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Science & Technology Law Group
STREET: 268 Bush Street, Suite 3200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1064 TNCARCARTTYGGNGARYTNAARTAYGTNMGNATHGTNYTNCAYCCNGAYACNGARCAYW 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1124 SNAARG
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                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 268 Bus. CITY: San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  944 ARGCNGTNCARGTNWSNAAYAARAARAARMGNAARYTNCCNWSNGAYGTNAAYGARGGNA 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
aagagattaaaactgccttgagtagcacattggataaaaccaatagagaattagtagatg
                                CNCARTTYGGNGCNGTNYTNGARGTNAAYATHCCNMGNAARCCNGAYGGNAARATGMGNG
                                                              ctgaaaacaatgatttgaaaaagaccatgagtcatcagtatgtgcccgtgaaaacccatg
                                                                                                  GNYTNATHATHMGNAAYYTNWSNTTYAARTGYWSNGARGAYGAYYTNAARACNGTNTTYG
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                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION NUMBER: US/09/098,487
                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Science & Technology Law Group
STREET: 268 Bush Street, Suite 3200
ATTORNEY/AGENT
                                                                                                                                                                                                                                                                                             APPLICANT: COLLINS, TITLE OF INVENTION: NUMBER OF SEQUENCES:
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STATE: CA
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                 CLASSIFICATION:
                                                                                                                                                                          COUNTRY: UZIP: 94104
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INFORMATION
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NAME: Osman Ph.D., Richard A REGISTRATION NUMBER: 36,627

36,627

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; TOPOLOGY: 1:
; MOLECULE TYPE:
US-09-098-487-2
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Best Local :
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INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 2277 base pairs
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)343-4341
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; LOCATION: (1)...(694)
; OTHER INFORMATION: n =
US-09-328-111-616
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APPLICANT: Monahan, John E.
APPLICANT: Schlegel, Robert
TITLE OF INVENTION: NOVEL HUMAN GENES AND GEI
TITLE OF INVENTION: NOVEL HUMAN GENES AND GEI
TITLE REFERENCE: CCD-257 (US)
FILE REFERENCE: CCD-257 (US)
CURRENT APPLICATION UNMBER: US/09/328,111
CURRENT FILING DATE: 1999-06-08
EARLIER APPLICATION NUMBER: US 60/088,801
EARLIER FILING DATE: 1998-06-10
NUMBER OF SEQ ID NOS: 850
SOFTWARE: FASTSEQ for Windows Version 3.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 1.1%;
Best Local Similarity 47.0%;
Matches 197; Conservative
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LENGTH: 694
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Bushnell, Steven E. APPLICANT: Carroll III, Eddie APPLICANT: Catino, Theodore J. APPLICANT: Derti, Adnan APPLICANT: Ford, Donna M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Astle, Jon H. APPLICANT: Burgess, Christopher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1124 SNAARG 1129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           670 cctggctgcaaagtatgggcatgcactgtgtctacaaaaacttctacagtacaattgtcc 729
                                                                                                                                                                   185 tggagcattgtgtttagagcttctagttggcaatggggccgatgtcaatatgaagagtaa 244
                                                                                                                                                                                                                                                                                                                                                                                                                                    5 ccttctagatcttggagttgatatgaatgaaccaaatgcctatggaaatacacctcttca
                      ctgtccttctagcatacagctgctctgcgaccatggggcctcggtgaatgccaaagatgt 846
cattatccagagtggagctgtaatcgactgtgaggataagaatggaaatacccctttgca
                                                                                                                                                                                                                                                                              cactgaacatgtagacctgcagggaagaactgcacttca---tgatgcagctatggcaga 786
                                                                                                                                                                                                                                                                                                                                         tgtgaatcaaaagaatgaaaaaggatttactcctttgcactttgctgctgcatcaacaca 184
                                                                               agatgggaaaaccccactacacatgactgctctccacggtagattctcccgatcacaaac
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Pred. No. 0.00053;
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RESULT 8
US-08-631-097-3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (202)463-77
TELEFAX: (202)473-6915
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US
FILING DATE: 12-Oct-94
ATTORNEY/AGENT INFORMATION:
NAME: Cohen, Herbert
REGISTRATION NUMBER: 25,10
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APPLICANT: Kimchi
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HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                          CLONE: not applicable POSITION IN GENOME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 07-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)463-7700
TELEPAX: (202)473-6915
                                                                                    FEATURE:
                                                                                                                                                                               IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                         FRAGMENT TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: ASCII
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Tumor Suppressor Genes, TITLE OF INVENTION: Proten Encloded Thereby,
                                                                                                                                                                                                             CELL TYPE:
CELL LINE:
ORGANELLE:
                                                                                                           CHROMOSOME/SEGMENT: not applicable MAP POSITION: not applicable
                                                                                                                                                                                                                                                           STRAIN: not applicable
INDIVIDUAL ISOLATE: not applicable
DEVELOPMENTAL STAGE: not applicable
HAPLOTYPE: not applicable
TISSUE TYPE: blood
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                                                  NAME/KEY:
                                                                NAME/KEY:
                    IDENTIFICATION
                                     LOCATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
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900 17th Street,
                              Seq. ID. NO.: 3 is the sequence in claim 1(111) as not available
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                                                                                                                                                                                                                                                                                                                                                                        No. 5968816 applicable
 METHOD:
                                                                                                                                                                                                                                                                                                                                                                                                                         Genomic DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT/US94/11598
                                                                                                                                                                                                                                                                                           not applicable
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experiment-
in specification
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                                             Figure
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                                           8 of the specification
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; NAME/KEY: CDS
; LOCATION: (337)..(4605)
US-08-810-712-9
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US-08-810-712-9
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OTHER INFORMATION: promoted cell death;
PUBLICATION INFORMATION: not available
US-08-631-097-3
  Query Match
Best Local Similarity
Matches 211; Conserv
                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 9, Applica
Patent No. 6160106
                                                                                                                                                                                                                                                                                                                                    APPLICANT: Yeda Research and Development Co. LTD
TITLE OF INVENTION: Tumor Suppressor Genes, Proteins Encoded Thereby
TITLE OF INVENTION: Use of said Genes and Proteins
FILE REFERENCE: sequencelist
CURRENT APPLICATION NUMBER: US/08/810,712G
CCURRENT FILING DATE: 1997-03-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 211; Conserv
                                                                                                                                                                                                                                                                                                     EARLIER APPLICATION NUMBER: PCT/US94/11598 EARLIER FILING DATE: 1994-10-12
                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS:
                                                                                                                                                                              TYPE: DNA
ORGANISM: Homo
                                                                                                                                                                  FEATURE
                                                                                                                                                                                                                          LENGTH: 5886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2120 ATTTGGACATCTCCAACAAGTATGGGGGGAACGCCTCTGCACCTTGCGGCCAACA 2173
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTGGCATGTAAAGATGGCAACATGCCTATCGTGGTGGCCCTCTGTGAAGCAAACTGCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAACGTGAACATCAAGAACCGAGAAGGAGAGACGCCCCTCCTGACAGCCTCTGCCAGGG 1879
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Score 53.2; DB 4;
Pred. No. 0.0016;
0; Mismatches 263;
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Pred. No. 0.0014;
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                                       Length 5886;
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US-08-181-629A-2
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APPLICANT: Swamin
                                                                                            TELEX: 25-3856
INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: 'Clough, David W.
REGISTRATION NUMBER: 36,107
REFERENCE/DOCKET NUMBER: 31
TELECOMMUNICATION INFORMATION:
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TITLE OF INVENTION: Recombinant CviJI Restriction Endonuclease
                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
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                                                                        SEQUENCE CHARACTERISTICS:
TYPE: nucleic
STRANDEDNESS:
TOPOLOGY: line
                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION:
                                                                                                                               TELEPHONE: 312/474-6300
TELEFAX: 312/474-0448
                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                               TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
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Best Local Similarity
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APPLICANT: de Taisne, Charles
APPLICANT: Tine, John A.
                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/257,073
FILING DATE: 09-JUN-1994
                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3802 GATGTGTATAAAAACACTCATCGAAGCAGGTGGTAACATCAAC 3846
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                   CITY: New York
STATE: New Yor
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                                  CLASSIFICATION:
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Best Local Similarity
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TELEX: 425066 CURTMS
INFORMATION FOR SEQ ID NO: 4:
                                       3388
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (212) 840-3333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 20-MAR-1991
ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 2223 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Frommer, William S.
REGISTRATION NUMBER: 25,506
REFERENCE/DOCKET NUMBER: 454310-2570
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
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                           taataccagtgaagaagaggccaagaagtgcaagcaagagaatgacaa 3435
GAAGAAGAAGAATAGTACCAGAAAATTTGACAACTGAAGAATCAAAA 2220
                                                             abatttaaagccactgagaaagaacta-aaagaacgctatcccagcagcacacagaagta
                                                                                                                                                       atacaggaatgcatcaagctaaaatatgctccgatcatcagcttggaagagtgtgagaga 3328
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20-MAR-1991
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Pred. No. 0.0019;
0; Mismatches 365;
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US-08-182-175A-104
                                                                                                                                                                       Query Match 1.1
Best Local Similarity 48.6
Matches 141; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 104, Patent No. 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
3117 gagagcatgaagaaagatgagtggcctaaggaagagcatgaagaaggtccaggacaaca 3176
                                                                       3057 tattaaaaagaaatotggagaacactcagaaccaagtaaaagctgagtacatcagcctaa
                                                                                                                           2997 tgaagaagaagtgtgaagatataaatcaagaatttgtgaaaataaaagatgagaacgaaa 3056
                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 340 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 3,692
REFERENCE/DOCKET NUMBER: BB
TELECOMMUNICATION INFORMATION:
TELEPHONE: (302) 992-4929
                                                                                                                                                                                                                                                                                                                                                                                             IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                   LOCATION: 3..326
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                               NAME/KEY:
LOCATION:
                                            64 AACTGAAAGAGGAAATGAAGAAGCTCGAAGAGAAGATGAAGGTCATGGAGGAGAAGATGA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN: E. coli
CELL TYPE: DH5 alpha
                                                                                                                                                                                                                                                                    OTHER INFORMATION:
                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (302) 892-7949
TELEX: 835420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 9 August 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 07/743,006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                          TGGAGGAGAAGATGAAAAAGCTCAAGGAGGAAATGGCTAAGATGAAAGACGAAATGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wilmington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 340 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   )4, Application US/08182175A
5559223
                                                                                                                                                                                                                                                                                                                                                                           segment 534 (seg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Delaware
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: E.I. du Pont de Nemours and Company
1007 Market Street
                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sharon J. Kee.
Janet A. Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    double
                                                                                                                                                                                        1.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic Storage Proteins with Defined
                                                                                                                                                                                                                                                                /function= "synthetic seed
/product= "protein"
/gene= "ssp"
/standard_name= "SSP-534"
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                                                                                                                                                                      Score 51.6; DB 1;
Pred. No. 0.00092;
0; Mismatches 149;
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PCT-US92-06412-104
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         Query Match 1.1%;
Best Local Similarity 48.6%;
Matches 141; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                      TELEX: 835420
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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APPLICANT:
                                                                                                                                                                                                                                                                                  MOLECULE TYPE: D
ORIGINAL SOURCE:
STRAIN: E. col
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Sharon J. Keeler
APPLICANT: Janet A. Rice
TITLE OF INVENTION: Synthetic Storage Proteins with Defined Structure Containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3237 agattgcagcccagaagagagaactcgacacgatacaggaatgcatcaag
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/743,006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184 TGAAGAAGCTCGAAGAGAAGATGAAGGTCATGGAGGAGAAGATGAAAAAGCTCGAAGAAA 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION: TELEPHONE: (302) 992-4929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Linda Axamethy Flo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                244 AGATGAAGGCAATGGAAGACAAAATGAAGTGGCTTGAGGAGAAAATGAAG 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124 AAAAGCTGGAAGAAAAGATGAAGGCTATGGAGGACAAGATGAAATGGCTTGAGGAAAAGA 183
                                                                                                             LOCATION: 3..326
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                     MMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PFILING DATE: 19920807
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy Disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: BB-1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 9 August 1991
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                                                                                                                                                                                                                                                                       CELL TYPE:
                                                                                                                                                                                                  NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                            ropology:
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                                                                                                                                                                                                                                                                                    E. coli
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                                                                                                                                                                                                                                                                                                                        DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                         double
                                                                                                                             /function= "synthetic seed storage protein"
/product= "protein"
/gene= "ssp"
                                                                                                              /standard_name= "SSP-534"
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            9
                             Score 51.6; DB 5; Pred. No. 0.00092;
            Mismatches
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                149;
                                             Length 340;
              Indels
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              0;
              Gaps
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                                                                     US-08-728-323A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Applic
Patent No. 5948676
GENERAL INFORMATI
Query Match
Best Local Similarity
                                                                                                                                                                                                                        TELEFAX: 212-391-0525
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 05
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
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TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC OPERATING SYSTEM:
SOFTWARE: PatentI
                                                                                                                        FEATURE:
                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 AACTGAAAGAGGAAATGAAGAAGCTCGAAGAGAAGATGAAGGTCATGGAGGAGAAGATGA 123
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STATE: New Yor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: U.S.A.
                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                      ENGTH:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGCTGGAAGAAAAGATGAAGGCTATGGAGGACAAGATGAAATGGCTTGAGGAAAAGA 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGAAGCTCGAAGAAGATGAAGGTCATGGAGGAGAAGATGAAAAAGCTCGAAGAAA 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATGAAGGCAATGGAAGACAAAATGAAGTGGCTTGAGGAGAAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
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85 Avenue of the Americas
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Encoding Same And Uses Thereof
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   Score
Pred.
   51.6; DB
No. 0.003;
                    <u>ب</u>
                    Length 3489;
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PATENT NO. 5849564

GENERAL INFORMATION:
APPLICANT: Chang, Yuan
APPLICANT: Russo, James J.
APPLICANT: Russo, James J.
APPLICANT: Edelman, Isldore S.
APPLICANT: Moore, Patrick S.
APPLICANT: MOORE, PATRICE
TITLE OF INVENTION: HERPESVIRUS,
NUMBER OF SEQUENCES: 20
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US-08-770-379-20/c
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                                    TELEFAX: (212) 391-0525
INFORMATION FOR SEQ ID NO:
                                                                APPLICATION NUMBER: US/08/770
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 28,678
REFERENCE/DOCKET NUMBER: 5234
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 278-0400
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
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ADDRESSEE: Cooper & Dunham LLP
STREET: 1185 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                 STREET: 1185 Ave
CITY: New York
STATE: New York
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; TYPE: nucleic acid
; STRANDEDNESS: double
; TOPOLOGY: linear
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US-08-770-379-20
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Best Local Similarity 45.98;
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REFERENCE AUTHORS TITLE JOURNAL MEDLINE ACCESSION VERSION KEYWORDS SOURCE RESULT AK012454 LOCUS PUBMED REFERENCE PUBMED REFERENCE DEFINITION JOURNAL MEDLINE ORGANISM TITLE AUTHORS Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome research. 10 (10), 1617-1630 (2000) Mus musculus (strain:C57BL/6J) 11 days embryo cDNA to mRNA, clone\_lib:RIKEN full-length enriched mouse cDNA library clone:2700059D02. l (bases 1 to 1545)
Carninci,P. and Hayashizaki,Y.
High-efficiency full-length cDNA cloning
Methods in enzymology. 303, 19-44 (1999) Mus musculus 11 days embryo cDNA, RIKEN full-len Library, clone:2700059D02, full insert sequence AK012454 AK012454.1 GI:12849206 3 (bases 1 to 1545)
Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Sumi,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., 11042159 3 (bases Eukaryota; Metazoa; Mus musculus CAP trapper. AK012454 Mammalia; Eutheria; Chordata; Rodentia; mRNA CDNA, RIKEN full-length enriched Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus

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BASE COUNT
ORIGIN
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AUTHORS
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JOURNAL
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AL Direct Submission

AL Direct Submission

AL Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Gemomic Sciences Center (GSC), Kanagawa 230-0045, Japan (E-mail:genome-res@ggc.riken.go.jp, URL.http://genome-gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Please visit our web site (http://genome.gsc.riken.go.jp/)
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Fax:81-45-503-9216)
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Adachi,J., Aizawa,K., Akahira,S., Akimura,T., Aono,H., Arakawa,T., Carninci,P., Fukuda,S., Fukunishi,Y., Furur
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Pred. No. 1.7e-140;
                                                                    AGAAGGTCTCTGCCAAGGACGAGAAGGAGCTGC
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                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D.
Email: ggapbs-remail.nih.gov
Tissue Procurement: James Cleaver, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
Sequencing by: Incyte Genomics, Inc.
Clone distribution: MCC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10629 row: h column: 24
High quality sequence stop: 804.
location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG742332 810 bp mRNA
602631492F1 NCI_CGAP_Skn3 Homo
mRNA sequence.
BG742332 ---
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
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Mammalia; Eutheria;
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EST.
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/clone=_lib="NCI_CGAP_Skn3"
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Primer: Oligo
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IMAGE: 4776647
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Query Match
Best Local Similarity
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EST.
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602277187F2 NIH_MGC_86
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata;
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IMAGE: 4365116
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Best Local S
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               ctgccaaacaaatcgaagcaaaagataataagataactgaactgctcaatgatgtggaga
                                                          TGAATAGAAAGTATGAGGAAGTATGTGAGGAAGTTTTTGCATGCCAAAAAGAAGGAAATAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="IMAGE:4355116"
/clone_lib="NIH_MGC_86"
/clone_lib="NIH_MGC_86"
/clone_type="osteosarcoma, cell line"
/tlssue_type="osteosarcoma, cell line"
/hab_host="NH108 (phage-resistant)"
/note="Organ: bone; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.533 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
a 145 c 178 g 168 t
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Pred. No. 4.1e-98;
0; Mismatches 99
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                                                                                                                                                                                                                                                                                       Email: genomics@hri.co.jp
HRI human cDNA project; 5'- & 3'-end one pass sequencing: Helix
Research Institute; cDNA library construction: Department of
Virology, Institute of Medical Science, University of Tokyo, and
Helix Research Institute.
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EST.
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Helix Research Institute
1532-3 Yana, Kisarazu, Chiba
Tel: 81-438-52-3951
Fax: 81-438-52-3952
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/clone_lib="HEMBA1"
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/dev_stage="embryo, 10 weeks"
/note="Vector: pME18SFL3"
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602591830F1 NIH_MGC_79
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                              Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                   GCAAAGGTGTTACGAGAAAGAGCAGCAGACAGTGACCAAACTGCATCAATTGTTGGAGAA
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Plate: LLCM1572 row: k column: 07
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Location/Qualifiers
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/clone="Ib="NHHMGC-79"
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/note="Organ: placenta; Vector: pDNR-LIB (Clontech);
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aabaacagaagagctgaacagacagttaabagacctgttgcagaaatacacagaggcaba
                                            CAAGAAAAACAAGCAAGAGAATGACAAGTTAAAGAAGGAGATTTTTACCCCTTCAGAAAGA
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BG176687
BG176687.1 GI:
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Louis Staudt, M.D., Ph.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I. M.A.G. E. Consortium (LLN
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
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Plate: LLAMI0154 row: e column:
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NIH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collections (1999)
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602313291F1 NIH_MGC_85
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                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4419071"
/clone=lib="NHLMGC_85"
/tlssue_type="lymphoma, cell line"
/tlssue_type="lymphoma, cell line"
/tlssue_type="lymphoma, cell line"
/lab_host="MH10B (phage-resistant)"
/note="Organ: lymph; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.867 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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                                     CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM10084 row: m column: 15
High quality sequence stop: 738.
                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutharia; Primates; Catarrhini; Hominidae; 1 (bases 1 to 742)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: DCTD/DTP
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/clone="IMAGE:4392374"
/clone_11b="NHH_MGC_87"
/tlssue_type="mammary adenocarcinoma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: breast; Vector: pCMV-SPORT6; Site_1: Not1;
/note="Organ: breast; Vector: pCMV-SPORT6; Site_1: Not1;
/site_2: Sal; Cloned unidirectionally; oligo-dT primed.
Site_2: Sal; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.383 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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0; Mismatches 100;
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                                                                                aagaaaggaccatctttacaacagcgaaatttgtctcagatgctagatgaagtaaatacg
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                                                                                                                                                gacattotaacottaotgaagactgcatcagaaaattocaacaaagggagagaactttgg
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria; Primates; Catarrhini;
1 (bases 1 to 929)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
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602351531F1 NIH_MGC_90 Homo sapiens cDNA clone IMAGE:4449967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1999)
Contact: Robert Strausberg, Ph.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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//organism="Homo sapiens"
//ob_xref="taxon:9606"
//clone="IMAGE:4449967"
//clone_lib="NIH_MGC_90"
//tissue_type="adenocarcinoma, cell line"
//lab_host="PUHOB (phage-resistant)"
//lab_host="Organ: liver; Vector: pcMv-SPORT6; Site_1: Not1;
//note="Organ: liver; Vector: pcMv-SPORT6; Site_1: Not1;
//site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
30 a 139 c 247 g 213 t
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Tlasue Procurement: CLONETECH Laboratories, Inc.
cDNA Library Preparation: CLONETECH Laboratories, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://lmage.llnl.gov
Plate: LLCM1060 row: 1 column: 09
High quality sequence stop: 634.
Location/Qualifiers
1 889
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 88)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect
Unpublished (199)
Contact: Robert Strausberg, Ph.D.
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                                                                                                      and 3' adaptor sequence:
5'-ATTCTACAGGCCGAGGCGCGAGATG-dT(30)BN-3' (where B = A, C, Or G, Or T). Average insert size
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
inserts by PCR. This library was enriched for full-length
                                                                                                                                                                                                /organism="Homo saplens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="1MAGE:4246040"
/clone="1MAGE:4246040"
/clone="IMAGC:81"
/lab_host="DH10B (T] phage-resistant)"
/note="Organ: muscle (skeletal); Vector: pDNR-LIB
/note="Organ: muscle (skeletal); Vector: pDNR-LIB
(Clontech); Site_1: SfiI (9gccgcctcggcc); Site_2: SfiI
(9gccattatggcc); 5' and 3' adaptors were used in cloning
as follows: 5' adaptor sequence: 5'-CACGGCCATTATGGCCC-3'
                                                                                             clones and was constructed by Alto, CA). "
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IMAGE: 4246040
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National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 883)
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602364324F1 NIH_MGC_90 Homo sapiens cDNA
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                                                                                                                                                                                     BG253578.1 GI:12763394
                                                                                                                                                                                                  mRNA sequence.
BG253578
         CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium
Sequencing
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Plate: LLAM10293 row: p col
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nilarity 88.7%;
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/clone_lib="NHH_MGC_90"
/clone_lib="NHH_MGC_90"
/clone_lib="NHH_MGC_90"
/clone_lib="NHH_MGC_90"
/lab_host="DH10B (phage-resistant)"
/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: Not1;
/note="Organ: liver; Vector: pCMV-SPORT6; Si
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/db_xref="taxon:9606"
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Pred. No. 8.1e-83;
0; Mismatches 62;
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                                                           caaaactgaagaggtctccaaactccagtctgagattcagaatactaaacaagcgttaaa
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BG260897
BG260897.1 GI:
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Tissue Procurement: ATCC
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, M
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                                                                                                                                                                                                                                                                                                                                                                                Similarity
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/lab_host="pHHOB (phage-resistant)"
/note="organ: bladder; vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally: oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."

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/db_xref="taxon:9606"
/clone="IMAGE:4480441"
/clone_lib="NIH_MGC_93"
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Pred. No. 6.1e-82
0; Mismatches 7:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA sequence
BG436063
BG436063.1 (
EST.
                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH Laboratories, Inc.
CDNA Library Preparation: CLONTECH Laboratories, In
CDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                          Plate: LLCM1379 row: c column:
High quality sequence stop: 663.
                                                                                                                                                                                                                                                                    found through the I.M.A.G.E. http://image.llnl.gov
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1 (bases 1 to 666)
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602508850F1 NIH_MGC_79 Homo
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                      /note-"rogan: placenta: Vector: pDNR-LIB (Clontech);
Site_1: Sfil (ggccgcctcggcc); Site_2: Sfil (ggccattatggcc);
); 5' and 3' adaptors were used in cloning as follows: 5' adaptor sequence: 5'-CAGGGCCATTATGGGC-3' and 3' adaptor sequence: 5'-ATTCTAGAGGCCGAGGGGGGCGACATG-dT(30)BN-3'
(where B = A, C, or G and N = A, C, G, or T). Average contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palo Alto, CA). Note: this is a NIH_MGC
                                                                                                                                                /Organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4619460"
/clone_lib="NIH_MGC_79"
/lab_host="DH10B (TI phage-resistant)"
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Eutheria; Primates; Catarrhini; Hominidae;
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BG253615
BG253615.1 GI:
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalla; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 714)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
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02; Conservative
t: Robert Strausberg, cgapbs-r@mail.nih.go
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Pred. No. 9.6e-82;
0; Mismatches 57;
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aatactaaacaagcgttaaaaaaattagagactcgggaggtggttgatttgtcgaaatat 4027
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                                                          AATACTAAACAAGCATTAAAAAAATTAGAGACTAGAGAGGTAGTTGACTTGTCTAAATAT
                                                                                                                   AAGGAAGAAGAAAGCCAAAACAAATGGAAGAAGTCTCCAAACTTCAGTCGGAGGTTCAG
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CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
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/lab_host="DH10B (phage-resistant)"
/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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/db_xref="taxon:9606"
/clone="IMAGE:4472416"
/clone_lib="NIH_MGC_90"
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Tissue Procurement: CLONTECH Laboratories,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
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National Institutes of Health, Mammalian Gene Collection (MGC)
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Site_1: SfiI (ggccgcctcggcc); Site_2: SfiI (ggccattatggcc);
adaptor sequence: 5'-ACGCCANTATGGCC-3' and 3' adaptor sequence: 5'-ATTCTAGAGGCCGAGGCGGCCGACATG-dT(30)BN-3'
(where B = A, C, or G and N = A, C, G, or T). Average insert size 1.3 kb (range 0.5-4.0 kb). 15/15 colonies contained inserts by PCR. This library was enriched for full-length clones and was constructed by Clontech Laboratories (Palo Alto, CA). Note: this is a NIH_MGC
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/lab_host="DH10B (T1 phage-resistant)"
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/db_xref="taxon:9606"
/clone="IMAGE:4730552"
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BG120762.1
EST.
                                                                                  cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lini.gov
plate: LLAMI0217 row: h column: 05
High quality sequence stop: 669.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG120762 883 bp mRN/
602348520F1 NIH_MGC_90 Homo
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National Institutes of Health, Mammalian
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 883)
                                                                                                                                                                                                                                                                                                                                                                   Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
                                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                   sapiens
/organism="Homo saplens"
/db_xref="taxon:9606"
/clone="IMAGE:4443316"
/clone_11b="NIIL_MGC_90"
/tissue_type="udenocarcinoma,
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tcaggtccctgcagcagctggcggatgccgacagacagcacca 4473
                                                ggaag--tgggagtcccagcaggaggcagagtcagctgattgacagcctgcagcagcagg 4427
                                                                                               tcaatgatgtggagagattaaaaca---ggccctcaatggcctttccc-agctcacctat 4369
                                                                                                                                               GTCTAAATATAAAGCAACAAAAAGTGATTTGGAGACACAGATTTCTAGCTTAAATGAAAA
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/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies
Note: this is a NIH_MGC Library."
a 163 c 197 g 178 t
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Pred. No. 7.6e-81;
D; Mismatches 129;
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(GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

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Result
No.
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 200000000
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/SIDS2/gcgdata/geneseq/geneseqp/AA1982.DAT:*
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/SIDS2/gcgdata/geneseq/geneseqp/AA2000.DAT:
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AAW02258
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                                                Sequence of C3Vs.
Secreted protein c
Human myosin heavy
Human protein sequ
Human polypeptide
Nucleolar/endosoma
Human polypeptide
Rattus norvegicus
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Amino acid sequenc
Smooth muscle myos
Human 160kD mediat
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Novel bone marrow	AAU14603	22	5373	6.6	462	45
Merozoite apical-e	AAW24575	18	1254	6	463.5	44
Merozite apical-en	AAR07503	1	1254	•	463.5	4
	AAB41592	21	2096	٠	469.5	42
tic mite	AAE02246	22	1017		469.5	41
	AAW22775	18	1312		474	40
omoloque o	AAW71295	19	1312		477	u V
_	AAB47278	22	2139		479	۵ 8
	AAB94454	22	296		479.5	37
Mouse male enhance	AAW94391	20	1325		480	36
Male-enhanced anti	AAW19540	18	1325	6.8	480	35
	AAG39235	21	1521		488	34
	AAG39234	21	1528		490.5	w
o -	AAY49936	21	2101		503	32
thal	AAG36712	21	1744	7.2	504	31
	AAG36713	21	1710	7.2	504	30
	AAG36714	21	1703	7.2	504	29
va .	AAG39233	21	1562	7.2	504.5	28
	AAB18294	21	980	7.2	507	27
orote	AAY49937	21	2115	7.2	507.5	26
Sequence of the in	AAR47173	15	2101	7.3	514	25
Human polypeptide	AAM4 04 67	22	1788	7.3	516.5	24
HA/NuMA fus!	AAW21731	18	2272	7.4	519	23
z	AAW21732	18	2192	7.4	519	22
	AAM38681	22	1780	7.5	525	21
mitosin am	AAW23996	19	2482		540	20
	AAR72826	16	2482		540	19
Human protein segu	AAM25750	22	1879		554	18
Kinetochore protei	AAR99795	17	3248	•	561	17
Human cytoskeletal	AAY77575	21	2442	8.0	561	16
Restin protein seq	AAY06999	20	1392	٠	561	15
0	AAB18171	21	1979		562.5	14
	AAM41000	22	1988	•	566	13
Human polypeptide	AAM4 0999	22	1988	8.0	566	12

## ALIGNMENTS

Id Id	XX XX	×	PR	PR	PR	PR	PR	PR	××	ΡF	×	PD	×	ΡN	×	SO	XX	ΚW	X	X	×	DE	×	DŢ	×	AC	×	ID	AAY(	RESULT
Chen Y, Gout I, Gure A, O'Hare M, Obata Y, Old LJ; Pfreundschuh M, Sahin U, Scanlan MJ, Stockert E; Tureci O;	(LUDW-) LUDWIG INST CANCER RES.							22-JUN-1998; 98US-0102322.		15-JUL-1998; 98WO-US14679.		28-JAN-1999.		WO9904265-A2,	,	Homo sapiens.		prostate cancer.	cancer: renal cancer:	Cancer associated antiqen; diagnosis; research; treatment; human:		Sequence of C3Vs.		02-JUL-1999 (first entry)		AAY06996;		AAY06996 standard; Protein; 659 AA.	96	JLT 1

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Matches
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N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to a method for diagnosing a disorder characterised by expression of a human cancer associated antigen precursor coded for by a nucleic acid molecule (NAM). The method comprises: (a) contacting a biological sample isolated from a subject with an agent that specifically binds to the NAM, an expression product or a fragment of an expression product complexed with an HLA molecule; and (b) determining the interaction between the agent and the NAM or the expression product as a determination of the disorder. The products and methods can be used in the diagnosis, monitoring, research, or treatment of conditions characterised by the expression of various cancer associated antigens. The invention provides nucleic acid sequences and encoded polypeptides which are cancer associated antigen precursors expressed in human breast cancer, renal cancer, colon cancer, gastric cancer, prostate cancer and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example
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DB; AAX40197
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                                                                                                                                                                                                                                                                                                                         TASENSNKGRELWKKGPSLOORNLSOMLDEVNTKSNQREHONIODLEIENEDLKERLRKI
                                                                                                                                                                                                                                                                                                           tasentnkgrelwkkgpslqqrnlpymldevnvkssqrehrnlqeleienedlkdrlrki
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85.8%;
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                                                                                                                                          Query Match
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Matches 583;
                                                                                                                                                                                                                    The nucleotide sequence (NS) of the full-length protein-coding sequence of clones c125_4 (AAV83132), da228_6 (AAV83133), du410_5 (AAV83134), eh80_1 (AAV83135), er369_1 (AAV83136), fh123_5 (AAV83137), fm60_1 (AAV83138) or fr473_2 (AAV83139), (all clones are deposited as ATCC 98415) and the proteins they encode are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals for example, tumour suppression/invasion activity, immune system boosting activity. The polynucleotides are also believed to be useful for gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Agostino
Racie LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW85608;
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                                                                                                                                                                                                                                                                                                                                                       Claim 15; Page 66-68; 104pp; English.
                                                                                                                                                                                                                                                                                                                                                                          New polynucleotides encoding secreted human proteins from human foetal brain, adult brain, adult blood or plibraries, useful, e.g. as potential immunomodulators
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25-APR-1997;
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                                             ETVFIPPERHEKEMMALKSNITELKKOLSELNKKCGEDQEKIYSLMSENNDLKKTMSHQY 842
                                                                                           MKN--VPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLMENASLSKNVSRL
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VPVKTHEEIKTALSSTLDKTNRELVDVKKKCEDINQEFVKIKDENEILKRNLENTQNQVK
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97US-0845296.
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ony stimulating factor; CSF; interleukin; cloning;
; tumour suppression; immune boosting.
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                                   Claim 1; Page
                                                                      Polypeptide-human myosin said polypeptide -
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DB; AAH75522.
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                                     26-27 Disclosure;
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Homo sapiens

protein primer;

sequence

SEQ

H

NO:10714.

detection; diagnosis; antisense therapy; gene therapy.

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ARBSULT
AAB925
ID AAB9
XX AAB9
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Best Local S
Matches 583
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661 vqeallqiiqmrqglvc
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                                                            AAB92542 standard;
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                                        26-JUN-2001
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                                        (first
                                                            Protein;
                                        entry)
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                                                                                                                                                                                                                                                                                                                                    Score 2919; DB 22;
Pred. No. 3.3e-128;
7; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                        immunodeficiency virus
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CC full-length cDNAs defined in the specification. Where a primer set CC full-length cDNAs defined in the specification. Where a primer set CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary cto the complementary strand of a polynucleotide which comprises one of CC the 5602 nucleotide sequences defined in the specification, where the CC oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the CC complementary strand of a polynucleotide which comprises a 5'-end CC sequence and an oligonucleotide comprising a sequence, where the CC oligonucleotide which comprises a 3'-end sequence, where the CC oligonucleotide comprises and the combination of the specification. The primers are useful for synthesising polynucleotides, CC of the specification of the primers are useful for synthesising polynucleotides, CC detection and/or diagnosis of the abnormality of the proteins encoded by CC the full-length cDNAs. The primers are also useful for the comprise and cCC AAB3593 represent human cDNAs equences; AAH3368 and CC AAB3593 to AAH13674 represent human cDNA sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the present invention.
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Best Local
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27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                             Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                        876
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                                                              KCGEDQEKIYSLMSENNDLKKTMSHQYVPVKTHEEIKTALSSTLDKTNRELVDVKKKCED
                                                                                                                                                                    qtlqke1ekvyldnk11keqahn1t1emknhyvp1kvsedmkkshda11dd1nrk11dvt
                                                                                                                                                                                      QTLQKEIEKVCLDNKLLTQQVNNLTTEMKN--VPLKVSEEMKKSHDVIVDDLNKKLSDVT 755
                                              {f kcgedqekihaltsentnlkk}mmsn{f qyvpvktheevkmtlndtlaktnrelldvkkkfed}
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438; Conserv
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99JP-0300253.
2000JP-0118776.
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81.9%;
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Wakamatsu
                                                                                                                                                                                                                                                                                                  48;
                                                                                                                                                                                                                                                                                             Score 2201; DB 22;
Pred. No. 5.6e-95;
48; Mismatches 47;
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C, Otsuki
                                                                                                                                                                                                                                                                                                                          Length
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14-SEP-2000;
19-OCT-2000;
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25-APR-2000;
09-JUL-2000;
19-JUL-2000;
                                                                                                                                                                                                                                                                                                               Tang
Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             numan; noorcopic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzhelmer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation; leukaemia.
                                                                                                                                                                          Novel nucleic acids and such as central nervous
                                                                                                                                                                                                                                                                                                                                                                           (HYSE-)
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Wang Z,
Zhou P,
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2000US-0662191.
2000US-0693036.
2000US-0727344.
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2000US-0598042.
2000US-0620312.
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Wehrman T,
Goodrich F
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system injuries
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Xu C,
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The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAAI88642-AAI42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide in gene therapy is a composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous

peripheral

nervous

injuries,

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and shy-prager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and thrapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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                                     TQNQVKAEYISLREHEEKMSGL-----
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                                                                                                                                                                                         LKKOLSELNKKCGEDOEKIYSLMSENNDLKKTMSHQYVP-VKTHEEIKTA------
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                                                                                                                 -LSSTLDKTNRELVDVKKKCEDIN------
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Pred. No. 3.1e-21
5; Mismatches 46
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DNA encoding nucleolar-endosomal auto-antigen - useful for exact	WPI; 1996-403153/41. N-PSDB; AAT58751.	Renz M, Seelig HP;	(PRIV-) PRIVATES INST IMMUNOLOGIE 6 MOLEKULARGEN.	27-APR-1995; 95DE-1015514.	27-APR-1995; 95DE-1015514.	12-SEP-1996.	DE19515514-C1.	Homo sapiens.	Auto-antibody; p162; rheumatic disease; antigen; diagnosis; gene therapy.	Nucleolar/endosomal auto-antigen p162.	09-MAR-1997 (first entry)	AAW02258;	T 6 258 AAW02258 standard; Protein; 1411 AA.	2142 vtkikeeqhesinkfemdfidevekqkellikiqhlqqdcdvpsrel 2188	E	2086 hlmeslrekcsrikellkrysemddhyechnisidlekeiefhrimkklkyvisy 2141	RLKQAL		238 FEVOREV-LIMAKKKELSAKDKELSAKD	200 KLETREVVDLSKYKATKSDLETQISDLNEKLANLNRKY 1237	913 getkardleiggelktarmlskehketvdklrekisektigisdigkdldkskdelg 196	1140 ENOKNSSVPLAEHLQVKEAFEKEVGIIKASLREKEEESQNKTEEVSKLQSEIQNTKQALK 1199	.853 kkqikdqs1t1skleien1n1aqe1henleemksvmkerdn1rrveet1klerdq1kes1 1912	087		1041 -ERALSRKTEELNRQLKDLLQKYTEAKKEKEKLVEENAKQTSEILAA 1086	1733 hqetidklrgivsektneisnmgkdlehsndalkaqdlkiqeelriahmhlkeqqetidk 1792	996TOKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIENSYET 1040	673 ilhenleemrsvtkerddlrsveetlkverdqlkenlretitrdlekqeelkivhmhlke 1732	969 APIISLEE	:	929 SAEILAKYKKSQEEIVTLHEEIAAQKRELDTIQ-ECIKLKY 968

encoding nucleolar-endosomal auto-antigen - useful for exact

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Best Local S
Matches 294
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
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                                                               qradlqnhldtaqnalqdkqqelnkittqldqvtaklqdkqehcsqleshlkeykekyls
                      \tt leqkteelegqikkleadslevkaskeqalqdlqqqrqlntdlelratelskqlemekei
                                                                                    -----ENA-----SLSKNVSRLETVFIPPERHEKEMMALKSNITELKKQLSE
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                                                                                                                            EM--KNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEME---KLLM-----
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    -VDVKKK---CEDINQEFVKIKDENEILKRNLENTQNQVKAEYISLREHEE---
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25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
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29-NOV-2000;
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                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 286; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The sequence is that of a mutant rat alpha-myosin heavy chain which was used in the development of transgenic mammals, specifically mice. They can be used as a model for studying congestive heart failure (CHF) or hypertrophic cardiomyopathy. Such animals are used to study molecular and cellular events associated with CHF; to identify compounds for treating CHF, and in evaluating effects of diet and exercise on CHF. Conditions associated with CHF that can be evaluated this way are dilated or hypertrophic cardiomyopathy; acute aortic regurgitation; tricuspid stenosis; constrictive pericarditis; acute infective endocarditis; ischaemic heart disease; hypertension; primary myocardial disease; valvular or pericardial disease; hyperthyroidism; anaemia; arteriovenous fistula; beri-beri and Paget's disease.
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Region
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-230690/20.
N-PSDB; AAV21518.
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                                                                    REHQNIQDLEIENEDLK ----ERLR ------KIQQEQRIL -----LD 309
                                                                                                                           \verb|tlfstyasadtgdsgkgkggkkkgssfqtvsalhrenlnklmtnlrtthphfvrclipne|
rkapgvmdnplvmhqlrcngvlegiricrkgfpnrilygdfrqryrilnpaalpegqfid\\
                                                                                                                                                                                                                                                                                                                                                                                                                    1886 AA;
                                                                                                                                                                                                                                                       Conservative 277; Mismatches 509;
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                                                                                                                                                                                                                                                                                        8.5%; Score 600; DB 1
20.9%; Pred. No. 5e-20;
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                                                                                                                                                                                                                                                                                                                     DB 19; Length 1886;
                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                           294;
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                                                                                                                                                                                                                                                           Gaps
                                                                                                                                  626
   686
                                                                                                                                                                                                277
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QY     310       Db     687       QY     354       Db     742       QY     382       Db     802       QY     431       Db     862	KVNGLQLQLNEEVMVADDLESEKEKLKSLLAAKEKQHEESLRTI sgkgaekligsldidhngykfghtkvffkagllglleemrderlsriitriqaqa -EALKSFFK
	DVQKRMYESEGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQLKD
<b>ب</b>	
Qy     622       Db     1086       Qy     674       Db     1136	eaggats eaggats ELGKRIT
Oy 730 Db 1188 Oy 787 Db 1248	LKVSBEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVF :
ь	THEEIKTALSSTLDKTNREL
Oy 892 Db 1358 Oy 949 Db 1418	RNLENTONOVKAEVISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSGEEIVTLHE
	CKQENDKLKKEILTLQKDLKDKNVHIENSYETERALSRKTEELNRQLKDLLQKYTEAKKE:: : :          : : :       :       :        :        :          :          :          :          :          :          :          :          :          :          :        :          :          :        :        :        :        :    :      :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :    :  :
	KEKLVEENAKQTSEILAAQTILQKQHVPLEQVESLKKSLSGTIETLKEELKTKQRCYEKE   ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
Oy 1189	SEIQNTKQALKKLETREVVDLS

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RESULT
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ID AAYO
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KW CENIP
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                                                                  The present sequence represents CENP-E (centromere-associated protein-E) CC of Xenopus. The protein has at least one of plus end-directed microtubule CC motor activity, ATPase (adenosine triphosphatase) activity and control of control ble binding activity. CENP-E is the motor that powers chromosome CC movement toward microtubule plus ends and is essential for congression CC cell proliferation. Agents that modulators of CENP-E can thus control CC therapeutic, bioagricultural and diagnostic agents, e.g. for treatment CC of unwanted cell proliferation (typical of many examples are tumors and CC metastases; vascular malfunction; inflammatory and immune diseases; CC angiogenesis; hypertension; restenosis; and fungal infections), also as CC insecticles) and plant growth regulators or activators for improving CC vields. CENP-E is also a diagnostic marker for dividing cells, including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
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   Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inflammatory disease; immune disease; angiogenesis; hypertension; restenosis; fungal infection; selective herbicide; fungicide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    microtubule binding activity; chromosome movement; mitosis; cell proliferation; tumor; metastasis; vascular malfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plus end-directed microtubule
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Query Match Best Local Similarity

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Smooth muscle; myosin heavy chain; SM1 isoform; rabbit; arterioscl gene therapy; mouse; SM2 isoform; retrovirus; adenovirus; restenos associated adenovirus; coronary artery catheterisation; sclerotic
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                                                            Arakawa E,
Sugawara M,
                                                                                                                                                                                                                                          25-JAN-1995;
                                                                                                                                                                                                                                                                                                 25-JAN-1996;
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      WPI; 1996-362693/36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            musculus
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                                                                                                                                            OSAKA PREFECTURAL GOVERNMENT VESSEL RES LAB CO LTD.
                                                         Hasegawa K,
Takahashi K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----IEAKD-----NKITELLNDVERLKQALN-GLSQLT 1325
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retrovirus; adenovirus; restenosis;
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This sequence represents the smooth muscle myosin heavy chain SM1 isoform protein. The SM1 coding sequence was isolated from a mouse embryo cDNA library using probes based on the rabbit smooth muscle myosin heavy chain SM2 isoform. The isolated coding sequence is included in the gene therapy vector of the invention. The vector of the invention consists of the coding sequence inserted into a retrovirus, adenovirus, associated adenovirus or animal-expression plasmid vector (such as pCXN2 or PAGE208). The vector can be used in the gene therapy treatment of arteriosclerosis, particularly for the reduction of restenosis occurring following coronary artery catheterisation for widening of sclerotic
                                                                                                                                                                                                                                                                                                                                                                               DNA encoding smooth muscle myosin heavy chain SM1 isoform - use a vector for gene therapy for reduction of re-stenosis following coronary artery catheterisation
                                                                                                                                                                                                                                                                                                                                      Claim 5; Page 14-27; 42pp; Japanese.
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Sequence arteries.

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                             160 kD human polypeptide mediator or precursor of inflammation polyclonal or monoclonal antibodies to polypeptide treat and diagnose chronic inflammation and hodgkins lymphoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-FEB-1991.
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Sorg C, Dewolf-Peeters
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DB; AAQ10378.
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Matches 269
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 NQVKAEYI---SLREHEE-----KMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHE 948
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22.9%; Pred. No. 3e-19;
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                                                      Wang
Zhao
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25-APR-2000;
                                                                                                                                                                                                                                                                                                         Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzhelmer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
  Novel nucleic acids
                                                                                                (HYSE-)
                                                                                                                                                  03-AUG-2000;
                                                                                                                                                                      09-JUL-2000;
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DB; AAI60155.
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                                                                                              HYSEQ
                                                   Liu C,
Wang Z,
Zhou P,
                                                                                                                  2000US-0488725.
2000US-0553317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0663191.
2000US-0693036.
2000US-0727344.
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                                                   Asundi V,
Wehrman T,
Goodrich R
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Yang Y,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activinyinhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
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Note: The sequence data
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akdaaslesqlqdtqellqeetrqklnlssrirqleeeknslqeqqeeeeearknlekqv
                                 KSNITELKKQLSELNKKCGED------QEKIYSLMSENNDLKKTMSHQYVPVKTHEEIK 852
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                                                                                                                                 mrqrhataleelseqleqakrfkanleknkqgletdnkelacevkvlqqvkaesehkrkk 1268
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25-APR-2000;
09-JUL-2000;
19-JUL-2000;
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2000US-0488725.
2000US-0552317.
2000US-0598042.
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C.N.S disorders.
Note: The sequence data for this patent did not
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14-SEP-2000; 2000US-0662191.
19-OCT-2000; 2000US-0693036.
29-NOV-2000; 2000US-0727344.
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                                                                                    Plasmodium falciparum chromosome 2 related protein SEQ ID
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                                  malaria;
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                                 chromosome 2;
protozoacide;
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                                  infection; insecticide.
                                                   human malaria parasite; vaccine;
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SRSMLRPLELAL --- PNQASYSENETLKKELEAMRTFCDSAKQDRLKLQNELAHKVAECK 460

vnyesk---leelekelkevkdknldnndyenk----lkekedfvkqk-----idmlne KOHEESLRTIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVHMQ

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                                                                                                                                           Query Match
Best Local Similarity
Matches 283; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention describes proteins and their fragments (I) encoded by chromosome 2 of the human malarial parasite, Plasmodium falciparum.
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ekeikyredekkrnineinnikk
                           AKQIEAKDNKITELLNDVERLKQ
                                                                                                        evmelnnkknelieennkl---nlvdqgk-kklkkdvekqkkeieklnkqltkcnkqide
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Length 1392; Indels 294;

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Sequence

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XX AAY0
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XX Canc
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XX WO99
XX Homc
PN WO99
XX Homc
PN IO-C
PR 10-C
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                                                                The invention relates to a method for diagnosing a disorder characterised by expression of a human cancer associated antigen precursor coded for by a nucleic acid molecule (NAM). The method comprises: (a) contacting a biological sample isolated from a subject with an agent that specifically binds to the NAM, an expression product or a fragment of an expression product complexed with an HLA molecule; and (b) determining the interaction between the agent and the NAM or the expression product as a determination of the disorder. The products and methods can be used in the diagnosis, monitoring, research, or treatment of conditions characterised by the expression of various cancer associated antigens. The invention provides nucleic acid sequences and encoded polypeptides which are cancer associated antigen precursors expressed in human breast cancer, renal cancer, colon cancer, gastric cancer, prostate cancer and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-JUN-1998;
17-JUL-1997;
10-OCT-1997;
10-OCT-1997;
10-OCT-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated cancer associated nucleic acids and polypeptides isolated using sera from cancer patients, used to develop profor the diagnosis, monitoring or treatment of cancers
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/cgn2_6/ptodata/2/laa/6B_COMB.pep:*
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/cgn2_6/ptodata/2/laa/backfiles1.pep:*
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           US-08-353-700-1
PCT-US95-16216-1
US-08-328-254-6
US-08-466-390-4
US-08-467-781-4
US-08-467-781-4
US-08-483-924-1
US-08-483-924-1
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US-08-93-06160-4
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US-08-687-080-51
US-09-104-3248-1
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Query Match 8.0
Best Local Similarity 21.9
Matches 343; Conservative
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	Sequence 1, Appl1	Sequence 2, Appli	Sequence 1, Appli	sequence 2, Appl1	,	ָי ר	5	N	ω ·	Sequence 10, Appl	•	8	Sequence 62, Appl	Sequence 62, Appl	Sequence 4, Appli	5	•	Sequence 16, Appl

## ALIGNMENTS

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; HYPOTHETICAL: NO; ANTI-SENSE: NO; ORIGINAL SOURCE: ORGANISM: HUMALUS-08-353-700-1
                                                                                                                                                                                                               TELEFAX: (215) 563-4044
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/353
FILING DATE: 09-DEC-1994
CLASSIETCATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: REED, JANET E.
REGISTRATION NUMBER: 36,252
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 563-4100
                                                                                               TYPE: anino acid
TYPE: anino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 19103-2307
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
TOTAL TARTON NUMBER: 182 / 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: YEN, TIMOTHY J.
APPLICANT: RATTNER, JEROME B.
TITLE OF INVENTION: UNCLEIC ACID ENCODING
TITLE OF INVENTION: TRANSIENTLY-EXPRESSED
TITLE OF INVENTION: AND METHODS OF USE
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: DANN, DORFMAN, HERRELL AND SKILLMAN STREET: 1601 MARKET STREET, SUITE 720 CITY: PHIADELPHIA STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/08353700
                                                                                                                                                                                          3248 amino acids
                                                                               .. protein
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KINETOCHORE PROTEIN
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8.0%; Score 561; DB 21.9%; Pred. No. 1.3e tive 245; Mismatches

DB 1; Length 3248; .3e-22;

465;

Indels 514;

Gaps

72;

1031	3 SLEECERKFKATEKELKEQLSQQTQKY-NTSEEEAKKCKQENDKLKKEILTLQKDLKDKN :	97: 97:	gg Qy
972	O KSMKKVQDNSAEILAKYKKSQEEIVTLHEEIAAQKRELDTIQECIKLKYAPII    :     :    : : : : : : : : : : : : :	920 915	g dg
914		85 0	B 2
858 919	NIIGEQGSMPSERSECRLEADQSPKNSAILQNRVDSLEFSLESQKQMNSDLQKQCEELVQ	799	р В
868		843	Qy
798	LSELNKKCGEDQEKIYSLMSENNDLKKTMSHQY-    :	810 739	₽ <b>2</b>
738	TQKLAYMELOQKAEFSDQKHQKEIENMCLKTSQLTGQVEDLEHK	695	망
809	KYTEKKLEMEKLIMENASISKNVSRLETVFIPPERHEKEMMALKSNITELKKQ	757	ν 2 2
756	IEKVÇLDNKLLTQQVNNLTTEMKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTH	704	2 9
703 643	KLAQHVKPEEHEQLKSRLEQKSGELGKRITELTSKNQTLQKE	662 587	g Qy
586	DLQEKINQGENSLTLEKLKLAVADLEKQRDCSQDLLKKREHHIEQLND	539	рb
661	DLSAKLALSIPAEKFENMKSLLSNELNEKAKKLI-DVEREYERSLNETRPLKRELENLKA	603	Q.
602 538	VEEFKRDEGKLMEENKRLQKELSMCELEREKRGRKLTEMEGQLK :    :	559 481	g 9
558 480	LTSDAATGNHRLMEELKDQLKDMKVKYEGASAEVGKLRNQIKQNEML    :	512 421	B 5
420	EDALDY	361	B 2
360	LOGHEKEMKGQVNKFQELQLQLEKAKVELIEKEKVLNKCRDELVRTTAQYDQASTKYTAL	301	d d
480		460	Q
459 300	SYSSENEILKKELEAMRTFCDSAKQDRLKLQN-ELAHKVAEC	420 244	g Q
243		186	D 5
185	ERSQQAAQSADVSLINPCNTPQKIPTTPLTPSQYYSGSKYEDLKEKYNKEVEERKKLEAEV	126	§ B
374	AAKEKQHEESLRTIEALKSRFKYEESDHLGSGSHF	340	Qy
125	KRENORLMEICESLEKTKOKISHELOVKESOVNFQEGOLNSGKKOIEKLEGELKRCKSEL	66	용 5
339	KSLL	291	5 5
290	ELWKKGPSLQQ-RNLSQMLDEVNTKSNQREHQ2	251	} Q

	RESI PCT: SI	О О У О О О О О О О О О О О О О О О О О	0 0 0 0 0 0 0 0 0 0	Qy Qy Db
DATA: BER: PCT DATA: BER: PCT DATA: BER: PCT DATA: BER: PCT DATA: BER: US 9-DEC-199 FORMATION DEC E. MBER: 36 INFORMATION INFO	ULT 2 -US95-16216-1 edguence 1, Application PC/TUS9 GENERAL INFORMATION: APPLICANT: Yen, Timothy J. APPLICANT: Rattner, Jerome TITLE OF INVENTION: Nucleic TITLE OF INVENTION: Express NUMBER OF SEQUENCES: 4 CORRESPONDENCE ADDRESS: ADDRESSEE: Dann, Dorfman, STREET: 1601 Market Stree CITY: Philadelphia STATE: PA COUNTRY: USA ZIP: 19103-2307 ZIP: 19103-2307	1323 1354 1349 1349 1414 1394	1163 VGIIKASLREKEEESONKTEEVS  : :           :   :    1210 LVQLEAMLRNKELKLQESEKEKE  1210 SKYKATKSDLETQISD  1210 SKYKATKSDLETQISD  1210 SKYKATKSDLETQISD  1210 SKYKATKSDLETQISD	1032 1034 1086 1090 1118 1150
k k k	9516216  B. Acid Encoding a Transiently sed Kinetochore Protein, and Methods of Use sed Kinetochore Protein, and Skilman st Suite 720	SNSYEHLTLS	VGIIKASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDL 1209  : :	EAKKEKEKLVEENAKOTSEILA 1

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: LENGTH: 3248 amino acids
: TYPE: amino acid
: STRANDENESS: not relevant
: POPOLOGY: not relevant
: MOLECULE TYPE: protein
: HYPOTHETICAL: NO
: ANTI-SENSE: NO
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      NIIGEQGSMPSERSECRLEADQSPKNSAILQNRVDSLEFSLESQKQMNSDLQKQCEELVQ
                                                                                          LSELNK-----KCGED------QEKIYSLMSENN------DLKKTMSHQY-
                                                                                                                                                 KYTEKKLEMEKLLMENASLSKNVSRLETVFIPPERHEKEM--MALKSN----ITELKKQ 809
                                          --TQKLAYME--LQQKAEFS------DQKHQKEIENMCLKTSQLTGQVEDLEHK
                                                                                                                                                                            INH--LETCLKTQQIKSHEYNERVRTLEMDRENLSV--EIRNLHNV----LDSKSVEVE-
                                                                                                                                                                                                       IEKYCLDNKLLTQQVNN-----LTTEMKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTH 756
                                                             LQLLSNEIMDKDRCYQDLHAEYESLRDLLKSKDASLVTNEDHQRSLLAFDQQPAMHHSFA
                                                                                                                                                                                                                                     KLSKTEKESKALLSALELKKKEYEELK ---EEKTLFSCWKSENEKLLTQMESEKENLQSK 643
                                                                                                                                                                                                                                                                KL------AQHVKPEEHEQLKSRLEQKS-----GELGKRITELTSKNOTLQKE 703
                                                                                                                                                                                                                                                                                             DLQEKI-----NQQENSLTL-----EKLKLAVADLEKQRDCSQDLLKKREHHIEQLND 586
                                                                                                                                                                                                                                                                                                                      DLSAKLALSIPAEKFENMKSLLSNELNEKAKKLI-DVEREYERSLNETRPLKRELENLKA
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-POS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/328,254
                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1163
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                                                                                                                   COUNTRY:
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92122

US/08/328,254

Version

OSA

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RESULT 3
US-08-328-254-6
; Sequence 6, Application US/08328254
; Patent No. 5710022
; GENERAL INFORMATION:
Zhu, Xuellang
                                                                                                     APPLICANT: Zhu, Xueliang
APPLICANT: Lee, Wen-Hwa
TITLE OF INVENTION: A NO. 5:
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1354 GLLHGELVEDIPGGEFGEQPNEQHPVSLAPLDESNSYEHLTLSDKEVQMHFAELQEKFLS
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STREET: 4370 La Jo
CITY: San Diego
STATE: California
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                                                                                    ADDRESSEE:
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                                                   E: Campbell and Flores.
4370 La Jolla Village Drive,
                                                                                                                                                         5710022el Nuclear Mitotic Phosphoprotein
                                                      Suite
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24-OCT-1994

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ATTORNEY AGENT INFORMATION:

NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31.815
REFERENCE/DOCKET NUMBER: 9-CJ 11
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CARRACTERISTICS:
LENGTH: 2482 amino acids
TYPE: amino acids
TYPE: amino acids
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-328-254-6
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Best Local Similarity
Matches 352; Conserv
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                       1016 -----LDLSSRSLLGIDTEDAIQGR---NESCDISKEHTSETTERTPKHDVHQICDKDAQ
                                                                                                                                                                                                                                                              1068 QDLNLDIE---KITETGALKPTGECSGEQSPDTNYEPPGEDKTQGSSECISELSFSGPNA 1124
1230 TSEGLNSDLEMHADKSSREDIGDNVA-----KVNDSWKERFLDVENELSRIRSEKASIEH 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 670 ELEKICEILQAEKYELVTELN-DSRS------ECITATRKMAEEVGKLLNEVKIL 717
                                                                                                                                                                                                                    484 LKDV-----QKRMYESEGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQLKDMKVKY 538
                                                                                                                                                                                                                                                                                                             444 DRIKLQNELAHKVAECKAL--ALEC------ERVKEDSDEQIKQLE----DA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               276 NQREHQNIQDLEI-ENEDLKERLRKIQQEQRILLDKVNGLQLQLNEEVMVADDLESEKEK 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          873 DMSLLSNLEGAVSANQCSVDEVFCS--SLOEENLTRKETPSAPAKGVEELESLCEVYRQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 235 ILTILIK----TASENSNKGRELWKKGPSLQQRNLS------QMLDEVNTKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  820 ----NLRNFQGDLVKEMQLGLEEGLVPSLSSSCV--PDSSSLSSLG-DSSFYRALLEQTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       774 ELQEKFLSLQSEHKILHDQHCQMSSKMSELQTYVDSLKAENLVLST------
                                          596 EMEGOLKDLSAKLALSIPAEKFENMKSLLSNELNEKAK-KLIDVEREYERSLNETRPLKR 654
                                                                                                                                                                                                                                                                                                                                                                                                   395 STGMPVHMQSRSMLR-PLELALPNQASYSENEILKKELEAMRT------FCDSAKQ 443
                                                                                                                                                                                                                                                                                                                                                                                                                                               988 MESKLAAEKKQTEQLSLELEVAR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335 LKSLLAAKEKQHEESLRTIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCT 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 931 LEKLEEKMESQGIMKNKEIQE-LEQLLSSERQELDCLRKQYLSENEQWQ--QKLTSVTLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83 TSDTAGRNALH------LAAKYG-----HALCLQKLLQYNCPTEHVDLQGR-TALHDA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33 DVEKVSSIL-AKKGVNPGKLDVEGRSAFHVVASKGNLECLNAI------LIHGVDIT 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GADINSRDKONRTA - - LMLGCEYGCKDAVEVLIKNGADVTLLDALGHDSSYYARIGDNLD
                                                                                    EGASAEVGKLRNQIKQNEMLVE---EFKRDEGKLMEENKRLQKELSMCELEREKRGRKLT 595
|-----SKLHLQEVGLMTKIEACIELEKIVGELKKENSDLSEKLEVFSCDHQELLQRVE 122
                                                                                                                                                                            LVPMDFLGNQEDIHNLQLRVKETSNENLRLL-HVIED----RDRKVESLLNEMKELD---
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22-OCT-1993
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275 872 234

1176

US-08-466-390-4

Sequence 4, Application US/08466390 Patent No. 5686562
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: TUDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS

OF THE

1067

1015

987

ELENLKAKLAOHYKPEEHBOLKSRIEDGKSGELGKRITELTSKNOTLOKEIEKVCLDNKL-
CGKRITELTSKNOTLOKEIEKVCLDNKI

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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: US/08/466,390
FILING DATE: 06-7UN-1995
FILING DATE: 06-7UN-1995
CLASSIFICATION: 435
CLASSIFICATION: 435
APTORNEY/AGENT INFORMATION:
NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: MTP-013
FELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECAMION: (617) 248-7000
TELECAMION: (617) 248-7000
TELECAMION: (517) 248-7000
TELECAMION: (517) 248-7100
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 2101 amino acids
TYPE: TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match 7.3%; Score 514; DB 1; Length 2101; Best Local Similarity 20.1%; Pred. No. 2.9e-20; Matches 309; Conservative 274; Mismatches 524; Indels 434; Gaps
                         549 RNOIKQNEMLVEEFKR---DEGKLMEENKRLQKELSMCE--LEREKRGRKLTEMEGQLKD 603
677 ELQLRSEQQKATEKERVAQEKDQLQEQLQALKESLKVTKGSLEEEKR-RAADALEEQQRC 735
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ADDRESSEE: TESTA, HURWITZ & THIBEAULT
STREET: 125 HIGH STREET
CITY: BOSTON
STATE: MA
COUNTRY: USA
ZIP: 02110
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185 KONRTALMIGCEYGCKDAVEV-LIKNGADVTLIDAIGHDSSYYARIGDNIDILTLIKTAS 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                   ELAHKVAECKALALECERVKEDSDEQ-----IKQLEDALKDVQKRMYESEGKVK 499
                                                                                                                      OMOTHFLALKEHLTSDAATGN------HRLMEELKDQLKDMKVKYEGASAEVGKL 548
                                                                                                                                                          SLKOKEOOLKEVAEKOEATRODHAOOLATAAEEREASLRERDAALKOLEALEKEKAAKLE 618
                                                                                                                                                                                                                                            SELTTLNATIOOODQELAGIKQQAKEKQAQLAQT--LQQQEQASQGLRHQVEQ----LSS 558
                                                                                                                                                                                                                                                                                                                                                                                                           GKLSQLEEHLSQLQDNPPQEKGEVLGDVLQLETLKQEAATLAANNTQLQARVEMLETERG 444
                                                                               ILQQQLQVANE--ARDSAQTSVTQAQREKAELSRKVEELQACVETARQEQHEAQAQVAEL
                                                                                                                                                                                                                                                                                     SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450
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Qy 1323 Db 1647	Db 1592	Оу 126	Qy 1223 Db 1537	Db 1484	Qy 1167		. Оу 1133		Qy 1092	Db 1310	Оу 1036	Db 1250	Qу 987	Db 1190	Оу 955	Db 1130	Оу 906	Db 1072	0у 87	_	Qy 8:	,6 qa	ОУ 7	Db 8:	Qy 71		Qy 71	Db 7	ОУ 6	Db 7	ζ.
3 QLTYGSGSPSKRQSQLIDSLQQQVRSLQQQLADADRQHQEV 1363 	:         :	QEIKDQQERCDKSLTTITELQRRIQESAKQIEAKDNKTTELLINDVERLKQALNGIS	33 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFSIE 1266 13 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFSIE 1266 17 VEELSKKLADSDAASKVOOKKLANVOAOGGESOOFAORFOAOLNELOAOLSOKFO 1591		KASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDLSKYKATKSDLETO		TQLRQMLENQKNSSVPLAEHLOVKEAFEKEVGII	LQAEQAAAEKRHREELEQSKQAAGGLRAELLRAQRELGELIPLR	KOHVPLEOVESLKKSLSGTIETLKEELKTKORCYEKFOOTV	NLRQELTSQAERAEELGQELKAWQEKFFQKEQALSTLQLEHTSTQALVSELLPAKHLCQQ		ELKRLVMAESEKSQKLEESCACCRQRQPATVPELQNAALLCGRRCRASGREAEKQRVASE	ELKEQLSQQTQKYNTSEEEAKKC		RELDTIQECIKIKYAPIISLEECERKFKATEK	SKLEQQCQKQQEQADSLERSLEAERASRAERDSALETLQGQLEEKAQELGHSQSALASAQ		-  -  -  -  -  -  -  -  -  -  -  -  -	871KKCEDINGEFYKIKDENEILKRNLENTQNQVKAEY 905			::  : ::   AALMESQGQQQEERGQQEREVARLTQ	792 HEKEMMALKSNITELKKQLSELNKKCGEDQEKIYSLMS 829	892 EVRAQKLADDLSTLQEKMAATSKEVARLETLVRKAGEQQETASRELVKEPARAGDRQPEW 951	762 KLEMEKLIMEN-ASLSKNYSRLETVFIPPER 791	840 EECEKARQELQEAKEKVAGIESHSELQISRQQNKLAELHANLARALQQVQEK 891	702 KEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEK 761	785 LRRELAEAMAAQHTAESECEQIVKEVAAWRDGYEDSQQEEAQYGAMFQEQLMTLK 839	LENLKAKLAQ	736 ISELKAETRSLVEQHKRERKELEEERAGRKGLEARLLQLGEAHQAETEV 784	. II

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COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: PATENTIN PC-DOS/MS-DOS
SOFTWARE: PATENTIN PC-DOS/MS-DOS
SOFTWARE: PATENTIN PC-DOS/MS-DOS
CURRENT APPLICATION NOMBER: US/08/470,950
FILING DATE: 06-JUN-1995
FILING DATE: 06-JUN-1995
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: MTP-013
TELEPHONE: (617) 248-7000
TELEPHONE: (617) 248-7100
TELEPHONE: (617) 248-7100
TELEPAX: (617) 248-7100
SEQUENCE CHARACTERISTICS:
LENGTH: 2101 amino acids
TYPE: amino acid
TOPOLOGY: linear
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: TOUKATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
APPLICANT: LIDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HURWITZ & THIBEAULT
STREET: 125 HIGH STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                 559 SLKOKEQOLKEVAEKQEATRODHAQOLATAAEEREASLRERDAALKOLEALEKEKAAKLE 618
                                                                                                  505
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                                                                                                                                                                                                                                                                                                                                                                                                                 327 LREFASHLOOLODALNELTEEHSKATQEWLEKQAQLEKELSAA--LQDKKCLEEKNEILQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       297 LRKIQQEQRILLDKVNGL--------QLQLNEEVMVADDLESEK--EKLKSLLA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  269 AASPLEPKELEELRDKNESLTMRLHETLKQCQD-LKTEKSQMD-RKINQLSEENGDLSFK 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             244 ENS----NKGRELWKKGPSLQQR---NLSQMLDEVNTKSNQREHQNIQDLEIENEDLKER 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: US
ZIP: 02110
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CITY: BOSTON
SELTTLNATIOOODQELAGLKQQAKEKQAQLAQT--LQQQEQASQGLRHQVEQ----LSS 558
                                                                                                                                                                                            SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450
                                                                                                                                                                                                                                                                                   -----LGSGSHFRKEDMLLKQ-----
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1323 QLTYGSGSPSKRQSQLIDSLQQQVRSLQQQLADADRQHQEV 1363	Qy
1592 AAEHYKLOMEKAKTHYDAKKOONQELQEQLRSLEQLOKENKELRAEAERLGHELQ 1646	DЬ
H	φ
1537 VEELSKKLADSDQASKVQQQKLKAVQAQGGESQQEAQRFQAQLNELQAQLSQKEQ 1591	Дb
1223 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFSIE 1266	Qy
1167 KASLREKEEESQNKTEEVSKLQSEIQNIKQALNALIIKEVVULSA KAINSUULIQ 1990 1167 KAS	ОУ
4 QQLRAEKASYAEQLSMLKKAHGLLAEENRGLGERANLGRQFLEVELDQAREKYVQELAAV	Db
TOLRQMLENQKNSSYPLAEHL	οy
1370 LQAEQAAAEKRHREELEQSKQAAGGLKAELLRAQRELGELIPLRQKVAEQERTA 1423	Db
1092KQHVPLEQVEŚLKKSLSGTIETLKBELKTKQRCYEKEQQTV 1132	Qy
1310 NLRQELTSQAERAEELGQELKAWQEKFFQKEQALSTLQLEHTSTQALVSELLPAKHLCQQ 1369	Вb
1036 NSYETERALSRKTEELNRQLKDLLQKYTEAKKEKEL-VEENAKQTSEILAAQTLLQ- 1091	Qγ
1250 ELKRLYMAESEKSQKLEESCACCRORQPATVPELQNAALLCGRRCRASGREAEKQRVASE 1309	Дb
987 ELKEQLSQQTQKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIE 1035	Qy
1190 RELAAFRTKVQDHSKAEDEWKAQVARGRQEAERKNSLISSLEEEVSILNRQVLEKEGESK 1249	<b>D</b>
955 RELDTIQECIKLKYAPIISLEECERKFKATEK 986	Qy
1130 SKLEQQCQKQQEQADSLERSLEAERASRAERDSALETLQGQLEEKAQELGHSQSALASAQ 1189	Db
906 ISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHEEIAAQK 954	Qy
1072 LEAAQIKELEELRQTVKQLKEQLAKKEKEHASGSGAQSEAAGRTEPTGPKLEALRAEV 1129	DЬ
871KKCEDINQEFVKIKDENEILKRNLENTQNQVKAEY 905	Qy
1012 ERGRAQADLALEKAARAELEMRLQNALNEQRVEFATLQEALAHALTEKEGKDQELAKLRG 1071	망
B30 ENN	Qy
952 LEEQQGROFCSTQAALQAMEREAEQMGNELERLRAALMESQGQQGEERGQQEREVARLTQ 1011	DЬ
792 HEKEMAALKSNITELKKQLSELNKKCGEDQEKIYSLMS 829	Qy
892 EVRAQKLADDLSTLQEKMAATSKEVARLETLVRKAGEQQETASRELVKEPARAGDRQPEW 951	Db
762 KLEMEKLIMEN-ASLSKNVSRLETVFIPPER 791	γQ
840 EECEKARQELQEAKEKVAGIESHSELQISRQQNKLAELHANLARALQQVQEK 891	B
EIEKVCLDNKLLTQQVNNLTTEMKNV	Qy
785 LRRELAEAMAAQHTAESECEQLYKEVAAWRDGYEDSQQEEAQYGAMFQEQLMTLK 839	Дb
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736 ISELKAETRSLVEQHKRERKELEBERAGRKGLEARLLQLGEAHQAETEV 784	рь
604 LSAKLALSTPAEKFENMKSLLSNELNEKAKKLIDVEREYERSLNETRP 651	Qγ
677 ELQLRSEQQKATEKERVAQEKDQLQEQLQALKESLKVTKGSLEEEKR-RAADALEEQQRC 735	₽,
549 RNQIKQNEMLVEEFKRDEGKLMEENKRLOKELSMCELEREKRGRKLTEMEGQLKD 603	γo
619 ILQQQLQVANEARDSAQTSVTQAQREKAELSRKVEELQACVETARQEQHEAQAQVAEL 676	Db

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1647 ---- QAGLKTKEAEQTCRHLTAQVRSLEAQVAHADQQLRDL 1683

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; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-467-781-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:

NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-013
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 2101 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 7.3%; Score 514; DB 1; Length 2101; Best Local Similarity 20.1%; Pred. No. 2.9e-20; Matches 309; Conservative 274; Mismatches 524; Indels 434; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/08467781 Patent No. 5780596
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/467,781
FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: TOUKATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
CORRESPONDENCES: 6
CORRESPONDENCE ADDRESS: TESTA, HURMITZ & THIBEAULT
451 ELAHKVAECKALALECERVKEDSDEQ-----IKQLEDALKDVQKRMYESEGKVK 499
                                                                                   391 SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450
                                                                                                                                445 QQEAKLLAERGHFEEEKQQLSSLITDLQSSISNLSQAKEELEQASQAHGARLTAQVASLT 504
                                                                                                                                                                                 368 -----LGSGSHFRKEDMLLKQ------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                 297 LRKIQQEQRILLDKVNGL-------QLQLNEEVMVADDLESEK--EKLKSLLA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                        244 ENS----NKGRELWKKGPSLOOR---NLSOMLDEVNTKSNOREHONIODLEIENEDLKER 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215 QMRRLKKQLADERSNRDELELELAENRKLLTEKDA-----QIAMMQQRIDRLALLNEKQ 268
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CITY: BOSTON
STATE: MA
COUNTRY: USA
ZIP: 02110
                                         SELTTLNATIOQODQELAGLKQQAKEKQAQLAQT--LQQQEQASQGLRHQVEQ----LSS 558
                                                                                                                                                                                                                                                                                                          LREFASHLQQLQDALNELTEEHSKATQEWLEKQAQLEKELSAA--LQDKKCLEEKNEILQ 384
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Db 559 SIKOKROQUERNEKODANYONAEREASIARRENAKIOLDENKYVERASSERENAKIO   11   1   1   1   1   1   1   1   1
9 ILOQUIONNUTERENANCIERNANCIERNANLESCHARTELIAGONORE 1:11   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1:1   1
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US-08-483-924-4
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,924
FILING DATE: 07-JUN-1995
CLASSIFICATION: 435
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 27,829
REGISTRATION NUMBER: MTP-013
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
GENURUS (617) 248-7100
INFORMATION FOR SEQ ID NO: 4:
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                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 7.3%; Score 514; DB 2; Length 2101; Best Local Similarity 20.1%; Pred. No. 2.9e-20; Matches 309; Conservative 274; Mismatches 524; Indels 434; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: TOUGATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1647 ----QAGLKTKEAEQTCRHLTAQVRSLEAQVAHADQQLRDL 1683
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 2101 amino acids
                                                                                                                                                                                                                                                                                                                                     385
                                                                                                                         341 AKEKQHEESLRTIE-----
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                                                                                                                                                                                                                                                                                             244 ENS----NKGRELWKKGPSLOOR---NLSQMLDEVNTKSNQREHQNIQDLEIENEDLKER 296
            445 QQEAKLLAERGHFEEEKQQLSSLITDLQSSISNLSQAKEELEQASQAHGARLTAQVASLT 504
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 02110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: BOSTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                     -----LGSGSHFRKEDMLLKQ-------390
                                                                                             GKLSQLEEHLSQLQDNPPQEKGEVLGDYLQLETLKQEAATLAANNTQLQARVEMLETERG
                                                                                                                                                                          LREFASHLQQLQDALNELTEEHSKATQEWLEKQAQLEKELSAA--LQDKKCLEEKNEILQ 384
                                                                                                                                                                                                                LRKIQQEQRILLDKVNGL-------QLQLNEEVMVADDLESEK--EKLKSLLA 340
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1223 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSA---KDEKELLHFSIE---
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Db 505 SELTTIANTIOODODELAGLKOQÁKEKÓQLAGTLOODEDÁSOGLRHOVEOLISS  QY 451 ELAHKVAECKALALECERVKEDSDQ
451 ELAKVAECKALALEG 451 ELAKVAECKALALEG 559 SLKOKEQQLKEVAEKG 500 QMQTHFLALKEHLTSL 619 ILQQOLQVANE-ARI 619 ILQQOLQVANE-ARI 640 ENGIKONEMLVEEFKE 641 LSAKLALSIPAEKFEN 652 LKRELENLKAKLAQHY 1 :
505 S 451 E 509 S 509 S 500 C 619 1 649 F 664 F 667 F 664 F 736 S 736 S 736 S 785 S 786 S 787 S
505 S 451 E 559 S 500 G 619 S 649 S 677 S 604 S 736 S 785 S
505 9 451 E 559 9 500 9 619 1 549 1 604 1 736 6 736 7 752 7 762 892
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QMQTHFLALKEHLTSDAATGNHRLMEELKDQLKDMKVKYEGASAEVGKL 548	ELAHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYESEGKVK 499 	SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450 	GSGSHFRKEDMLLKQ	AKEKCHEESLRTIEAKKSREKYEESDH- 367 	LRKIQQEQRILLDKVNGL	ENSNKGRELWKKGPSLQORNLSQMLDEVNTKSNQREHQNIQDLEIENEDLKER 296	KQNRTALMLGCEYGCKDAVEV-LIKNGADVTLLDALGHDSSYYARIGDNLDILTLLKTAS 243 :	<pre>/ Match</pre>	1537 VEELSKRIADSDAAKVOOKKAAVOAGGESQOEAQRFQAQLNELQAQLSQKEO 1591  1267QEIKDQOERCDKSLTTITELQRRIQESAKQIEAKDNKITELLNDVERLKQALNGLS 1322  1592 AAEHYKLQMEKAKTHYDAKKQQQELQEQLRSLEQLQKENKELRAEAERLGHELQ 1646  1323 QLTYGSGSPSKRQSQLIDSLQQOVRSLQQQLADADRQHQEV 1363  1647QAGLKTKEABCTCRHLTAQVRSLEAQVAHADQQLRDL 1683  ISULT 8  Sequence 1, Application US/09452294  Petent No. 6287790  GENERAL INFORMATION: APPLICANT: Lelievre, Sophie APPLICANT: Neissell, Mina TITLE OF INVENTION: UTHERAPH AND DETECTION OF PROLIFERATIVE AND TITLE OF INVENTION UNMBER: US/09/452,294  CURRENT FILING DATE: 1999-11-30  CURRENT FILING DATE: 1999-11-30  PRIOR FILING DATE: 1999-11-30  PRIOR FILING DATE: 1999-11-30  PRIOR FILING DATE: 1998-11-30  SOFTMARE: Patentin Ver. 2.1  SED ID NO. 1  TYPE: PRT ORGANISH: Homo sapiens  -09-452-294-1

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	QLTYGSGSPSKROSOLIDSLOOOVRSLOOOLADADROHOFV 1	1323	γQ
1646	<b>≫</b>	1592	Db 5
_	VEELSKKLADSDQASKVQQQKLKAVQAQGGE	1537	<b>2 2</b>
1266	ISDLNEKLANLNRKY	1223	Qy
1536	RADAETR	1484	Db
1222	KASLREKEEESQNKTEEVSKLQSEIQNTKQ	1167	Qγ
1483	QQLRAEKASYAEQLSMLKKAHGLLAEENRGLGERANLGRQFLEVELL	1424	DЬ
1166		1133	Qy
1423	0 LQAEQAAAEKRHREELEQSKQAAGGLRAELLRAQRELGELIPLRQKVAEQERTA	1370	DЬ
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1369	0 NLRQELTSQAERAEELGQELKAWQEKFFOKEQALSTLQLEHTSTQALVSELLPAKHLCQQ	1310	ф
1091		1036	Qy
1309	ELKRLVMAESEKSQKLEESCACCRQRQPATVPELQNAALLCGRRCRAS	1250	Дb
1035		987	Qy
1249	RELAAFRTKVQDHSKAEDEWKAQVARGRQEAERKNSLISSLEEEVSILNRQVLEKEGES	1190	Db
8 986		955	Qy
	SKLEQOCOKOQEQADSLERSLEAERASRAERDSALET	1130	Db
	-	906	Qy
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		871	Qy
	 ERGRAQADLALEKAARAELE	1012	дb
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0 1011	LEEQQGRQFCS	952	Дb
S 829		792	Qy
W 951	)2 EVRAQKLADDLSTLQEKMAATSKEVARLETLVRKAGEQQETASRELVKEPARAGDRQPEW	892	дb
R 791		762	Qγ
	10 EECEKARQELQEAKEKVAGIESHSELQISRQQNKLAELHANLARALQQVQEK	840	ДD
K 761		702	Qγ
	85 LRRELAEAMAAQHTAESECEQLVKEVAAWRDGYEDSQQEEAQYGAMFQEQLMTLK	78	ДD
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	77 ELQLRSEQQKATEKERVAQEKDQLQEQLQALKESLKVTKGSLEEEKR-RAADALEEQQRC	677	ф
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RESULT 9
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/195,487
FILING DATE:
CLASSIFICATION: 435
CRISSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/901,701
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESO, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-013
TELECOMMUNICATION INFORMATION:
PETENDANCE: 617/2/AS-77000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/08195487 Patent No. 5783403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 7.3%; Score 512; DB Best Local Similarity 20.1%; Pred. No. 3.7e Matches 309; Conservative 273; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: TOUKATLY, GARY
APPLICANT: LIDGARD, GARHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 KQNRTALMLGCEYGCKDAVEV·LIKNGADVTLLDALGHDSSYYARIGDNLDILTLLKTAS 243
                                                                                                                                                                                                                                                                                                                                                                                244 ENS----NKGRELWKKGPSLOOR---NLSQMLDEVNTKSNOREHONTODLEIENEDLKER 296
                                                                                                                                                                                                                                                                                                                                                                                                                                  215 QMRRLKKQLADERSNRDELELELAENRKLLTEKDA-----QIAMMQQRIDRLALLNEKQ 268
                                        391 SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450
                                                                               445 QQEAKLLAERGHFEEEKQQLSSLITDLQSSISNLSQAKEELEQASQAHGARLTAQVASLT 504
                                                                                                                          368 -----LGSGSHFRKEDMLLKQ------
                                                                                                                                                                  385 GKLSQLEEHLSQLQDNPPQEKGEVLGDVLQLETLKQEAATLAANNTQLQARVEMLETERG 444
                                                                                                                                                                                                             341 AKEKQHEESLRTIE------367
                                                                                                                                                                                                                                                          327 LREFASHLQQLQDALNELTEEHSKATQEWLEKQAQLEKELSAA---LQDKKCLEEKNEILQ
                                                                                                                                                                                                                                                                                               269 AASPLEPKELEELRDKNESLTMRLHETLKQCQD-LKTEKSQMD-RKINQLSEENGDLSFK 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: US
ZIP: 02109
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
SELTTLNATIQQQDQELAGLKQQAKEKQAQLAQT--LQQQEQASQGLRHQVEQ----LSS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7.3%; Score 512; DB 1; I
20.1%; Pred. No. 3.7e-20;
ative 273; Mismatches 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 434;
                                                                                                                              ------ GOMYMTD 390
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    558
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1591	7 VEELSKKLAD	153	D D
1266	3 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFS	122	Qy
1536	RADAETRLAEVQREAQSTARELEVMTAKYEGAKVKVLEERQRFQEERQKLTAQ	1484	ф
1222	KASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDLS	1167	Qy
1483		1424	Db
1166		1133	ρ
1423	0 LQAEQAAAEKRHREELEQSKQAAGGLRAELLRAQRELGELIPLRQKVAEQDRTA	1370	ДD
1132	KQHVPLEQVESLKKSLSGTIE	1092	Qy
1369		1310	рь
1091	6 NSYETERALSRKTEELNRQLKDLLQKYTEAKKEKEKL-VEENAKQTSEILAAQTLLQ-	1036	Qy
1309		1250	DЪ
1035	7 ELKEQLSQOTQKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIE	987	Qy
1249	0 RELAAFRTKVQDHSKAEDEWKAQVARGRQEAERKNSLISSLEEEVSILNRQVLEKEGESK	1190	рь
986	RELDTIQECI	955	Qy
1189	0 SKLEQQCQKQQEQADSLERSLEAERASRAERDSALETLQGQLEEKAQELGHSQSALASAQ	1130	Db
954		906	Q
1129	2 LEAAQIKELEELROTVKQLKEQLAKKEKEHASGSGAQSEAAGRTEPTGPKLEALRAEV	1072	Дb
905	KKCEDINQEFVKIKDENEILKRNLENTONQVKAEY	871	οy
1071	ERGRAQADLALEKAARAELEMRLQNALNEQRVEFATLQEALAHALTEKEGKDQ	1012	Дb
870	- m	830	Qy
1011	2 LEEQOGROFCSTQAALQAMEREAEQMGNELERLRAALMESQGQQQEERGQQEREVARLTQ	952	Db
829	HEKENIALKSNITELKKOLSELNKKCGEDQEKIYSLMS	792	Qy
951	EVRAQKLADDLSTLQEKMAATSKEVARLETLVRKAGEQQETASRELVKEPARAGDRQPEW	892	Дb
791	KLEWEKLIMEN-ASLSKNVSRLETVFIPPER	762	Qy
891	EECEKARQELQEAKEKVAGIESHSELQISRQQNKLAELHANLARALQQVQEK	840	da
761	KEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVSEENKKSHDVIVDDLNKKLSDVTHKVTEK	702	Оy
839	LRRELAEAMAAQHTAESECEQLVKEVAAWRDGYEDSQQEEAQYGAMFQEQLMTLK	785	В
701	LKRELENLKAKLAOHVKPEEHEOLKSRLEOKSGELGKRITELTSKNOTLO	652	γo
784	ISELKAETRSLYEQHKRERKELEEERAGRKGLEARLLQLGEAHQAETEV	736	рь
651	LSAKLALSIPAEKFENMKSLLSNELNEKAKKLIDVEREYERSLNETRP	604	Qy
735	ELQLRSEQQKATEKERVAQEKDQLQEQLQALKESLKVTKGSLEEEKR-RAADALEEQQRC	677	DЬ
603	RNQIKQNEMLVEEFKRDEGKLMEENKRLQKELSMCELEREKRGRKLTEMEGQLKD	549	γO
676	ILQQQLQVANEARDSAQTSVTQAQREKAELSRKVEELQACVETARQEQHEAQAQVAEL	619	В
548	QMQTHFLALKEHLTSDAATGNHRLMEELKDQLKDMKVKYEGASAEVGKL		ργ
618	SIKOKEQQIKEYAEKQEATRODHAQQIATAAEEREASIRERDAAIKQIEAIEKEKAAKIE	559	Db
433	ELAHKVAECKALALECERVKEDSDEOIKQLEDALKUVQKKMI ESEGKYK	451	٥ م

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1267 -- QEIKDQQERCDKSLTTITELQRRIQESAKQIE-- AKDNKITELLNDVERLKQALNGLS 1322

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RESULT 10
PCT-US93-06160-4
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CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-
TELECOMMUNICATION INFORMATION:
"""" FPHONE: 617/248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 4: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: NOVEL MALIGNANT CE:
TITLE OF INVENTION: INTERIOR NUCLEAR M.
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA HURWITZ & THIBEAULT
STREET: 53 STATE STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy
               391
                                                                                                                                                                                                                                                                                                                                                                      185 KONRTALMIGCEYGCKDAVEV-LIKNGADVTLLDALGHDSSYYARIGDNIDILTLLKTAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
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CITY: BOSTON
STATE: MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE: 19930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: UZIP: 02109
SQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQN 450
                                    QQEAKLLAERGHFEEEKQQLSSLITDLQSSISNLSQAKEELEQASQAHGARLTAQVASLT
                                                                                                                                                                                                                                                                                              ENS----NKGRELWKKGPSLOOR---NLSOMLDEVNTKSNOREHONTODLEIENEDLKER 296
                                                                                                                                                                                                                                                                                                                                  QMRRLKKQLADERSNRDELELELAENRKLLTEKDA-----QIAMMQQRIDRLALLNEKQ 268
                                                                                                           GKLSQLEEHLSQLQDNPPQEKGEVLGDVLQLETLKQEAATLAANNTQLQARVEMLETERG
                                                                                                                                                       AKEKQHEESLRTIE-----
                                                                                                                                                                                   LREFASHLQQLQDALNELTEEHSKATQEWLEKQAQLEKELSAA--LQDKKCLEEKNEILQ 384
                                                                                                                                                                                                                       LRKIQQEQRILLDKVNGL-------QLQLNEEVMVADDLESEK--EKLKSLLA 340
                                                                                                                                                                                                                                                          AASPLEPKELEELRDKNESLIMRLHEILKQCQD-LKTEKSQMD-RKINQLSEENGDLSFK 326
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   1223 ISDLNEKLANLNRKYEEVCEEVLHAKKKELSA---KDEKELLHFSIE-----
                                        1484 RADAETRLAEVOREAQSTARELEVMTAKYEGAK--VKVLEERO-----RFQEEROKLTAQ
                                                                                       1167
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               955
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  785 LRREL---AEAMAAOHTAESECEQLYKEVAAWRDGYEDSQQEEAQYGAMFQE----QLMTLK 839
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619 ILQQQLQVANE--ARDSAQTSVTQAQREKAELSRKVEELQACVETARQEQHEAQAQVAEL
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                                                                           KAS----LREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDLSKYKATKSDLETQ 1222
                                                                                                                QQLRAEKASYAEQLSMLKKAHGLLAEENRGLGERANLGRQFLEVELDQAREKYVQELAAV 1483
                                                                                                                                                         TQLR-----QMLENQKNSSVPLAEHL------
                                                                                                                                                                                                                                                                                              NSYETERALSRKTEELNRQLKDILQKYTEAKKEKEKL-VEENAKQ--TSEILAAQTLLQ- 1091
                                                                                                                                                                                        LQAEQAAAEKRH--REELEQSKQAAGG----LRAELLRAQRELGELIPLRQKVAEQDRTA 1423
                                                                                                                                                                                                                                                                NLRQELTSQAERAEELGQELKAWQEKFFQKEQALSTLQLEHTSTQALVSELLPAKHLCQQ 1369
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SKLEQQCQKQQEQADSLERSLEAERASRAERDSALETLQGQLEEKAQELGHSQSALASAQ 1189
                                                                                                                                                                                                                                                                                                                                        ELKRLYMAESEKSQKLEESCACCRQRQPATVPELQNAALLCGRRCRASGREAEKQRVASE 1309
                                                                                                                                                                                                                                                                                                                                                                           ELKEQLSQQTQKYNTSEEEAKKCKQENDKLKKEILTLQ------KDLKDKNVHIE 1035
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US-08-592-126-148
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                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
RECISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 4600
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0960
INFORMATION FOR SEQ ID NO: 148:
SEQUENCE CHARACTERISTICS:
LENGTH: 1312 amino acids
TYPE: amino acid
TYPE: amino acid
TYPE: Jinear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                            Query Match 6.8%; Score 477; DI Best Local Similarity 22.1%; Pred. No. 1.70 Matches 314; Conservative 236; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Gregory
TITLE OF INVENTION:
TITLE OF INVENTION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                         108 LOYNCPTEH-VDLQGRTALHDAAMA---DCPSSIQLLCDHGASVNAKDVDGRTPLVLATQ 163
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
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                                                                                                                                                      MCRPTICOLLIDRGADINSRDKONRTALMLGCEYGCKDAVEVLIKNGADVTLLDALGH-D
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                                                                                SSYYARIGDNLDIL-TLLKTASENSNKGRELWKKGPSLQQRNLSQMLDEVNTKS-----
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94306
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Pred. No. 1.7e-18;
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                                                                                                        KASLREKE----EESQNK-----TEEVSK-LQSEIQNTKQALKKLETREVVDLSKYKA 1214
                                                                                                                                            EVEEERKOHLKEMGQMQVLOMKSEHOKLEENIDNIKRNHNLALGR----QKGYEEEIIHF 1088
                                                                                                                                                                                                                                                                                                                   CKQENDKLKKEILTLQKDLKD--KNVH-----IENSYETERALSRKTEELNRQLKDLLQK 1061
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                                        TKSDLETQISDL-NEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFSI----EQEI 1269
                                                                                                                                                                             ----TKORCYEKEOOTVTOLR---OMLEN----OKNSSVPLAEHLQVKEAFEKEVGII 1166
                                                                                                                                                                                                                    LSECEKHKEKINED-------MRLMRQDIDTQKIQERWLQDNL--TLRKRNEELK
         ----IRDLWRSTYRGQDIEYIEIRSDA----DENVSASDKRRNYNYRVVMLKGDTA 1194
                                                                                                                                                                                                                                                                                    DKL-----NDIKEKVKNIHGYMKDIENYIQDGKDDYKKQKE--TELNKVIAQ
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891 776 786 681

722

Y 223 SSIERKIGUNUULL-TLLKTASENSNKGRELWKKOPSLOORNLSOMLDEVNTKS 275	98	Qy 164 MCRPTICQLLIDRGADINSRDKQNRTALMLGCEYGCKDAVEVLIKNGADVTLLDALGH-D 222	Db 49 LKYICTGDEPPGTKGNTFVHDPKVAQETDVRAQIRLQFRDVNGELIAVQ 97	DHGASVNAKDVDGRTDIVIATO 163	2.5e-18; hes 515; Indel	6.7%; Score 474; DB	US-08-68/-080-51	; INDIVIDUAL ISOLATE: TRANS. OF RAD50 CDNA (SEQ. 54), NT. INDIVIDUAL ISOLATE: 389 TO 4324	ORIGINAL SOURCE:	FΨ	TOPOLOGY: linear	TYPE: amino acid	SEQUENCE CHARACTERISTICS:	TELEPAX: (415) 324-0860	TELECOMMUNICATION INFORMATION:	CD.	Y/AGENT I	FITTING APPLICATION NUMBER: US 08/592,126		_	SOFTWARE: Patentin Release #1.0, Version #1.25	MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible	ΒI	_∃ €	Palo	EE: Dehlinger & Associates	NUMBER OF SEQUENCES: 175	CANT: Gregory Dolganov	; sequence 1. Application US/08687080 ; Patent No. 5965427	-080		1250VEIIKSRSQQ-RNFQLLVITHDEDFVELL		1195	
Db .	O B	Qy	DЬ	Qy	рь	Оу	DЬ	Qy	Db	Qy	Db	Qy	рb	Qy	рь	Qy	В	Qy	рь	Qy	DЬ	Oy	Db	Qy	Db	Qy	Db	Qy	Дb	Qy	Dъ	ОУ	Db	Qy	Db
1089	1033 1	1120	987	1062	942	1009	897	949	837	892	777	843	723	787	682	728	622	682	565	630	511	573	451	533	396	480	337	445	300	385	246	330	190	276	138

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Db 04	Db Qy	Оy	Ф	Qy	Дy	Дb	ОУ	Дb	g dy	Фр	Db	Db Qy	Db 04	Фy	B 6	Db Oy	Db Db	7
1167 KASLREKEEESONKTEEVSK-LQSEIQNTKQALKKLETREVVDLSKYKA	1120TKORCYEKEQQTVTQLRQMLENQKNSSVPLAEHLQVKEAFEKEVGII	1062 YTEAKKEKEKLVEENAKQTSEILAAQTLLQKQHVPLEQVESLKKSLSGTIETLKEELK		949 EIAAOKRELDTIQECIKLKYAPIISLEECERKFKATEKELKEOLSOOTQKYNTSEEEAKK   :	892 RNLENTONOVKAEYISLREHEEKMSGLRKSMKKVQDNSAEILAKVKKSQEEIVTLHE	843 VPVKTHEEIKTALSSTLDKTNRELVDVKKKCEDINGEFVKIKDENEILK	787 IPPERHEKEMMALKSNITELK-KQLSELNKKCGEDQEKIYSLMSENNDLKKTMSHQY  :   :   :     :	728 -VPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVF	F %	30 65	NKRLQKELSMCELEREKRGRKLTEMEGQLKDLSAKLALS	DMKVKYEGASAEVGKLRNQ-IKQNEML	480 LEDALKDVOKRMYESEGKVKOMOTHFLALKEHLTSDAATGNHRLMEELKDOLK :::	445 RLKLQNELAHKVAECKALALECERVKEDSDEQIKQ			138 REMISSIGVSKAVLNNVIFCHQEDSNWPLSEGKALKQKFDEIFSATRYIKAL 276NQREHONIQDLEIENEDLKERLRKIQOEQRILLDKVNGLQLQLNEEVMVADDLE	DEMICE! CUEVAUL MUTECHOESCH
۰ >	EVGII  : EIIHF																	
1214 1146	1166 1088	1119 1032	1061 986	1008 941	948 896	891 836	842 776	786 722	727 681	681 621	629 564	572 510	532 450	479 395	444 336	384 299	189 329 245	

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TYPE: amino acids
TOPOLOGY: linear
US-09-104-324B-4
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US-09-104-324B-4
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COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOFTMARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/104,324B
FILING DATE: 25-JUNE-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/892,702
FILING DATE: 15-JULY-1997
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 6.232460mbn D.
REGISTRATION NUMBER: 232460mbn D.
REGISTRATION NUMBER: LUD 5491
REFERENCE/DOCKET NUMBER: LUD 5491
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
TELEFAX: (212) 752-5958
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                Query Match 6.5%; Score 454.5; DB 4; Length 976; Best Local Similarity 22.3%; Pred. No. 2.1e-17; Matches 256; Conservative 199; Mismatches 376; Indels 319; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
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ZIP: 10103
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: T rect, Ozlem; Sahin, Ugur; Pfreundschuh, Michael
TITLE OF INVENTION: Methods For Diagnosis And Treating Cancers,
TITLE OF INVENTION: And Methods For Identifying Pathogenic Markers In A Sample Of
TITLE OF INVENTION: No. 6232460mal Cells
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                      219 LGHDSSYYARIG----DNLDILTLLKTASENSNKGRELWKKGPSLQQRNLSQMLDEVNTK 274
122
                       334 KLKSLLAAKEKOHEESLRTIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQC 393
                                                                                                                                                                          28 LGGDSTFFKSFNKCTEDDLE----FPFAKTNLSKNGENIDSDPALQKVNFLPVLEQVG-N 82
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STEAELROKESKLOENRKIIEAORKAIOELO-----FGNEKVSLKL-----
                                                                                   SDCHYQEGLKDSDLENSEGLSRVFSKLYKE---
                                                                                                                 SNOREHONIODLEIEN-EDLKERLRKIOOEQRILLDKVNGLQLQLNEEVMVADDLESEKE 333
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T: 666 Fifth Avenue
New York City
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NLNIPIEESKKKRKMAFEFDINSDSSETTDLL 901	SAKNTLSTPLP	842	В
IQESAKQIEAKDNKITELL  :    :  :  :  :	SIEQEIKDQQE	1264	Qy
-TVSRNFTSVDHGISKDKRDYLWT 841	PEIYWKLDSKAVPSQ	804	ф
HAKKKELS		1204	Оу
REEKEKLKREAKENTATLKEKKDKKTQTFLLET 803	SNLKAELLSVKKQLEIE	754	Дb
EKEEESQNKTEEVSKLQSEIQNTKQALKKLET 1203	NSSVPLAEHLQVKEAFEKEVGIIKASL	1144	Qy
KHQYDKIIEERDSELGLYKSKEQEQSSLRASLEIEL 753	IAEMVALMEKH	707	рb
ETLKEELKTKQRCYEKEQQTVTQLRQMLENQK 1143	LAAQTLLQKQHVPLEQVESL	1084	Qy
LLEEVEKAKVIADEAVKLQKEIDKRCQHK 706	IEDKKISEEN	668	рь
LKDLLQKYTEAKKEKEKLVEENAKQTSEI 1083	LKDKNVHIENSYETERALSRKTEELNRQL	1027	οy
YEIKVNKLELELESAKOKFGEITDTYOKE 667	5 IEELQQENKALKKKGTAESKQLNYYEIKVNKLELELESAKQKFGEITD-	615	Db
ILTLOKD 1	PIISLEECERKFKATEKE	970	οy
KSEENCHULRKQVENKNKY- 614	6LEYVREELKQKRDEVKCKLDKSEENCNNLRKQVEN-	576	Db
KSQEEIVTLHEEIAAQKRELDTIQECIKLKYA 969	EHE	910	γQ
NKKQEERMLKQIENLQETETQLRNE 575	SLENKELTQETSDMTLELKNQQEDINN NKKQEERMLKQIENLQETETQLRNE-	524	Db
FVKIKDENEILKRNLENTQNQVKAEYISLR 909		862	Qy
KDLKTELENEKLKNTELTSHCNKL 523	HDLEIQLTAITTSEQYYS KEVKDLKTELE-	479	Db
NDLKKTMSHQYVPVKTHEEIK-TALSSTLDK- 861	TELKKOLSELNKK	804	Qy
	/ KKVLGEKETLLYENKQFEKIAEELKGT-	437	ф
SKNVSRLETVFIPPERHEKEMMALKSNI 803	NKKLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVFIPPERHEKEMMAL	748	Qy
OKKSSELEEMTKLTNNKEVELEEL 436	LRTEQORLEKNEDQLKILTMELQKKSSEL	391	Db
NNLTTEMKNVPLKVSEEMKKSHDVIVDDL 747	TELTSKNOTLOKEIEKVCLD	691	Qy
KARAAHSEVVTEFETTVCSLE	ATKTICQLTEEKETQMEESN	348	DЬ
LKAKLAQHVKPEEHEQLKSRLEQKSGELGKRI 690		631	Оу
ELEDIKVSLQRSVSTQKALEEDLQI 347	EEKTKLQSENLKQSIEKQHHLTKELEDIKVSLQRSVSTQK-	300	рь
QUKDLSAKLALSIPAEKFENMKSLLSNELNE 630		571	Qy
DYEKIQH-LEQEYKKEINDKEKQVSLLLIQITEKENKMKDLTFLLEE-SRDKVNQL 299		246	рь
SGASAEVGKLRNQIKQNEMLVEEFKRDEGKLM 570	SLTH	511	γQ
MITAFQELRVQAENSRLEMHF-KLKE 245	RSAEKTKKYEYEREETRQVYN	192	Db
~	HKVAECKALALECERVKE	454	Qy
-EEGIQENKOLIKENNATRHLCNLLKETCA 191		163	DЬ
	TSTGMPVHMQSRSMLRPLELALP	394	Qy

RESULT 14 US-08-505-200-94 S-08-965-200-94 Sequence 94, Application US/08056200 ; Patent No. 5616500

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Best Local Similarity
Matches 298; Conserv
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OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PATENTIN Release #1.0, Ve

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/056,200

FILING DATE: 30-APR-1993

CLASSIFICATION: 435

APPLICATION: 435
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INFORMATION FOR SEQ ID NO: 94:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: FEGLICK, Michael F.
REGISTRATION NUMBER: 35,799
REFERENCE/DOCKET NUMBER: NIH054.001A
TELECHONE: (714) 760-0404
TELEPHONE: (714) 760-0404
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Chung, Soo-II
APPLICANT: Park, Sang-Chul
TITLE OF INVENTION: Trichohyalin and Transglutaminase-3
TITLE OF INVENTION: Mehods of Using Same
NUMBER OF SEQUENCES: 117
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                336
                                                 449
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                                                                                                                                                                                                                                                                                                                                                           80 KVAQACYY------ALGQATGLDEEKRARCDGKESLLQDRRTEED-----
                                                                                                                                                                                                                                                                                                                                                                                                                                          23
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TYPE: amino acid
TOPOLOGY: linear
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STATE:
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ZIP: 92660
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EQOLRREQEERREQQLRREQEEERREQQLRREQEEERREQQLRREQEEERREQQ----LRR 392
                                 QNELAHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYESEGKVKOMQTHFLAL 508
                                                                     EQLRKLERQELRRERQEEEEQQQQRLRREQQLRRKQEEERREQQEERREQQEERRE
                                                                                                     SMLRPLE------LALPNQASYSENEILKKELEAMRTFCDSAKQDRLKL 448
                                                                                                                                         EKQQQRRERQDRVFQEE----EEKEWRKRETVLRKEEEKLQEEE-----PQRQRELQEEE
                                                                                                                                                                                                               RRDEELWRQRQ---EWQEREERRAEEEQLQSCKGHETEEFPDEEQLRRRELLELRRKGRE
                                                                                                                                                                                                                                                 LLDKVNGLOLOLINEEVMVADDLESEKEKLKSLLA--AKEKQHEESLRTIEALKSRFK---
                                                                                                                                                                                                                                                                                                                       RELWKKGPSLOORNLSOMLDEVNTKSNQREHQNIQDLE---IENEDLKERLRKIQQEQRI
                                                                                                                                                                                                                                                                                                                                                                                                                               CD-GAALTKKDLKNLLEREFGAVLRRPHDPKTVDLILELLDR--DSNGRVDFNEFLLFIF 79
                                                                                                                                                                                                                                                                                   -----QRRFEPRDRQLEEEPGQRRRQKRQEQERELAEGEEQSEKQERLEQRDRQ
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620 Newport Center Drive, Sixteenth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.3%; Score 446.5; DB 1; ilarity 20.5%; Pred. No. 1.2e-16; Conservative 267; Mismatches 583;
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Kim, In-Gyu
                                                                                                                                                                           ----YFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVH----MQSR 405
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Version
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                          AALLQIIQMRQ 1395
                                                                                                                                                                               TITELORRIOESAKQIEAKDNKITELLNDVERLKQALNGLSQLTYGSGSPSKRQSQLIDS 1341
                                                                                                                                                                                                                                                                                                                                                                             EEQLLGEERETRRRQELERQYRKEEELQQEEEQLLREEPEKR----RRQERERQCREEEE 1132
LRLEEREQLRQ 1366
                                                               REEQPLLRQER----DRKFRE-----EELLHQEQGRKFLEEEORLREERERKFLKEEQQ 1355
                                                                                                                                          EEEQLEREEQKEAKRRDRKSQEEKQLLREEREEKRRRQETDR-----KFREEEQLLQE 1305
                                                                                                                                                                                                                    VRDNKVYCKGRENEQFRQLEDSQVRDRQSQQDLQHLLGEQQERDREQERRRWQQANRHFP 1252
                                                                                                                                                                                                                                                         ANLNRKYEEVCEEVLHAKKKELSAKD---EKELLHFSIEGEIKD-QGER-----CDKSLT 1281
                                                                                                     LQQEEEQLLREEREKRRRQELERQYREEEEELQRQKRKQRYRDEDQRSDLKWQWEPEKENA 1192
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                                                                                                                                                                                                                                                                                                                                                                                                                  -----TVTQLRQMLENQ--KNSSVPLAEHLQVKEAFEKEVGIIKASLREKE--EESQ 1178
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -------LLEAPQAGRAEAPQEQEEKRRRESELQWQEEERAHROQQEEEQRRDFTWQW 789
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US-08-800-644-94
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; MOLECULE TYPE: protein
US-08-800-644-94
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APPLICANT: Lee, Seung-Chul
APPLICANT: Kim, In-Gyu
APPLICANT: Chung, Soo-Il
APPLICANT: Chung, Soo-Il
TITLE OF INVENTION: Trichohyalin and Transglutaminase-3 and
TITLE OF INVENTION: Mehods of Using Same
NUMBER OF SEQUENCES: 117
CORRESSOE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
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Patent No.
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APPLICATION NUMBER: US 08/056,200
APPLICATION NUMBER: US 08/056,200
FILING DATE: 30-APR-1993
ATTORNEY,AGENT INFORMATION:
NAME: FEDERICK, Michael F.
REGISTRATION NUMBER: 36,799
REFERENCE/DOCKET NUMBER: NIH054.001A
TELECOMMUNICATION INFORMATION:
TELEPHONE: (714) 760-0604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO: 94:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC COMPATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/08/800,644
FILING DATE: 14-FEB-1997
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141 CDHGASVNAKDVDGRTPLVLATQMCRP-----TICQLLIDRGADINSRDKQNRTALML- 193
                                                                                                                                           168 RRDEELWRORO---EWQEREERRAEEEQLOSCKGHETEEFPDEEQLRRRELLELRRKGRE 224
                                                                                                                                                                                     307 LLDKVNGLQLQLNEEVMVADDLESEKEKLKSLLA--AKEKQHEESLRTIEALKSRFK---
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                                                                                                                                                                                                                                                                                                                                                                                  194 ----GCEYGCKDAVEVLIKNGADVTLLDALGHDSSYYARIGDNLDILTLLKTASENSNKG 249
                                                                                                362
                                                                                                                                                                                                                                                                                   250 RELWKKGPSLOORNLSQMLDEVNTKSNOREHONIODLE---IENEDLKERLRKIQQEQRI 306
                                            225 EKOQORRERODRVFQEE---EEKEWRKRETVLRKEEEKLQEEE-----PORQRELQEEE 275
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  406 SMLRPLE---
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ZIP: 92660
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                                                                                         -----YFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVH----MQSR 405
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-C-/Cgn2_1/USPTO_spool/US09750590/runat_10042002_145503_10858/app_query.fasta_1.1480
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                    5 1 AC022466 Homo saplens chromos 5 1 AC022466 Homo saplens chromos 1 AX193084 Sequence 651 from Pate AX193084 Sequence 651 from Pate AB028997 Homo saplens mRNA for L40157 Human endosome-associat AB028997 Homo saplens mRNA for M14628 D.discoideum myosin head 1 AB004801 Gallus gallus mRNA for gold M14628 D.discoideum myosin head 1 AB00434 Homo saplens mRNA for gold M14740 Human trans-Gold p230 L13098 Human mRNA for embryoni X82834 H.saplens GENP-E mRNA, I.03534 Entamoeba histolytica m U31906 Homo saplens goldin-245 U53862 Coturnix coturnix slow AB002334 Human mRNA for KIAAO3 L23034 Human mRNA for KIAAO3 L23034 Human mRNA for KIAAO3 L230405 S.cerevisiae chromosome X54378 Drosophila melanogas M76600 Mouse alpha cardiac myc AF400249 Glardia intestinalis AE014378 Drosophila melanogas X13100 Human mRNA for STAPOSOM M58018 Homo saplens beta-myosi X15191 Human beta-myosi X51591 Human beta-myosi
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2 AC010076 Homo Sapiens chromd
3 AC010090 Homo Sapiens CDNA FLJ
AB037755 Homo Sapiens mRNA for
AF155135 Homo Sapiens mRNA for
AF202315 Mus musculus ankycort
AF27,866 Mus musculus NORPEG-1
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X99145 Canis familiaris mRNA f
AB046781 Homo sapiens mRNA for
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                                                                       alignment_scores:
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BASE COUNT
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AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (20-NOV-2000) Kumamoto University Graduate School
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yamada, K., Senju, S. and Nishimura, Y Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yamada,K., Senju,S., Nakatsura,T., Murata,Y., Ishihara,M., Nakamura,S., Ohno,S., Negi,A. and Nishimura,Y. Identification of a novel autoantigen UACA in patients with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF322916 4428 bp mRNA PRI Homo sapiens uveal autoantigen mRNA, complete cds.
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Eutheria;
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M76598 Mouse alpha cardiac
M76699 Mouse alpha cardiac
M76601 Mouse alpha cardiac
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Percent Identity: 88.387

Length:

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1171 gGluLysGluGluGluSerGlaAsnLysThrGluGluValSerLysLeuG 1188	5 ValLys 5 :::    3 ATTAAA	1 SGlnArgCysTyrGluLysGluGlnGlnThrValThrGlnLeuArgGlnM		1088 hrLeuLeuGlnLysGlnHisValProLeuGluGlnValGluSerLeuLys 1104 ::	1071 sLeuValGluGluAsnAlaLysGlnThrSerGluIleLeuAlaAlaGlnT 1088 	1055 LeuLysAspLeuLeuGlnLysTyrThrGluAlaLysLysGluLysGluLy 1071 	1038 yrGluThrGluArgAlaLeuSerArgLysThrGluGluLeuAsnArgGln 1054 ::	1021 uThrLeuGlnLysAspLeuLysAspLysAsnValHisIleGluAsnSerT 1038 :	1005 GluAlaLysLysCysLysGlnGluAsnAspLysLeuLysLysGluIleLe 1021     :::	988 euLysGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGlu 1004       :::        :::	971 eIleSerLeuGluGluCysGluArgLysPheLysAlaThrGluLysGluL 988  :::   :::	955 ArgGluLeuAspThrIleGlnGluCysIleLysLeuLysTyrAlaProIl 971 :::	938 ysSerGlnGluGluILeValThrLeuHisGluGluILeAlaAlaGlnLys 954   :::	921 rMetLysLysValGlnAspAsnSerAlaGluIleLeuAlaLysTyrLysL 938     :::           :::::	905 TyrileSerLeuArgGluHisGluGluLysMetSerGlyLeuArgLysSe 921 	63

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TGATTGACACTCTGCAGCACCAAGTGAAATCTCTGGAGCAACAGCTGGCC 4162
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Bos taurus uveal autoantigen mRNA,
AF322915.1 GI:12240157
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Yamada,K., Senju,S., Nakatsura,T., Murata,Y., Ishihara,M.,
Nakamura,S., Ohno,S., Negi,A. and Nishimura,Y.
Identification of a novel autoantigen UACA in patients with
                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos.
Yamada, K., Senju, S.
Direct Submission
                                                      Biochem. Biophys. Res. Commun.
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   euHisLeuAlaAlaLysTyrGlyHisAlaLeuCysLeuGlnLysLeuLeu
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<b>ω</b> -	9 ArgPheLysTyrPheGluSerAspHisLeuGlySerGlySerHisPhe 374 	ნ ნ
2	12 ysGluLysGlnHisGluGluSerLeuArgThrIleGluAlaLeuLysSer 358 	342 1113
2	25 aAspAspLeuGluSerGluLysGluLysLeuLysSerLeuLeuAlaAlaL 342 	325 1063
52	)9 AspLysValAsnGlyLeuGlnLeuGlnLeuAsnGluGluValMetValA1 325 	309 1013
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2 9	12 laSerGluAsnSerAsnLysGlyArgGluLeuTrpLysLysGlyProSer 258 	242 813
2 2	25 rTyralaargIleGlyaspAsnLeuAspIleLeuThrLeuLeuLysThra 242 	225 763
2 5	09 AsnGlyAlaAspValThrLeuLeuAspAlaLeuGlyHisAspSerSerTy 225 	209 713
2 8	92 etLeuGlyCysGluTyrGlyCysLysAspAlaValGluValLeuIleLys 208 	192
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2 8	2 spHisGlyAlaSerValAsnAlaLySAspValAspGlyArgThrProLeu 15 	142 513
N N	UHISASPAlaAlaMetAlaAspCysProSerSerIleGlnLeuLeuCysA   14	12! 46:
<b>N</b> 5	9 GlnTyrAsnCysProThrGluHisValAspLeuGlnGlyArgThrAlaLe 12 	
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	673 2112 690	656 2062	640 2012	623 1962	606 1912	590 1862	573 1812	556 1762	540 1712	523 1662	506 1612	490 1562	473 1512	456 1462	1412	423 1362	1312

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i.	12 39	12 <sup>,</sup> 39	12: 38:	12: 38:	7 2	7 2	6 1	6 +	11: 35(	5 -	4	4	ωο	uο	NO	103 321	102 316	100 311
05 ThrGluLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnG	88 rgArgIleGlnGluSeralaLySGlnIleGluAlaLySAspAsnLy 	71 pGlnGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeu 	55 LysaspCluLysGluLeuLeuHisPheSerIleGluGlnGluIleI 	38 luGluYalCysGluGluYalLeuHisAlaLysLysLysGluLeuSe 	21 rGlnIleSerAspLeuAsnGluLysLeuAlaAsnLeuAsnArgLys               :::	05 GluvalvalaspleuSerLysTyrLysAlaThrLysSerAspleuG 	88 InSerGluIleGlnAsnThrLysGlnAlaLeuLysLysLeuGluTh         :::	71 gGluLysGluGluGluSerGlnAsnLysThrGluGluValSerLys 	55 VallysGluAlaPheGluLysGluValGlyIleIleLysAlaSerLe :::	38 etLeuGluAsnGlnLysAsnSerSerValProLeuAlaGluHisLe ::	21 sGlnArgCysTyrGluLysGluGlnGlnThrValThrGlnLeuArg 	05 LysSerLeuSerGlyThrIleGluThrLeuLysGluGluLeuLysT 	88 hrLeuLeuGlnLysGlnHisValProLeuGluGlnValGluSerLe ::	71 SLeuValGluGluAsnAlaLySGlnThrSerGluIleLeuAlaAla 	5 LeuLysaspLeuLeuGlnLysTyrThrGluAlaLysLysGluLysG 	8 yrGluThrGluArgAlaLeuSerArgLysThrGluGluLeuAsnAr ::	1 uThrLeuGlnLysAspLeuLysAspLysAsnValHisIleGluAsn	5 GluAlaLysLysCysLysGlnGluAsnAspLysLeuLysLysGluI    :::       3 GAAGTCAAGAAAACAAGCAAGAGAATGACAAGTTAAAGAAGGAGA
lyLe 1321	SILE 1304       GATA 4012	GlnA 1288       CAAA 3962	Lysas 1271       AAGGA 3912	rala 1254       TGCA 3862	TyrG 1238       TATG 3812	llih 1221       AGAC 3762	rArg 1204      TAGA 3712	LeuG 1188       CTTC 3662	euAr 1171       GAG 3612	uGln 1154       GCAG 3562	GlnM 1138    : CAAT 3512	hrLy 1121 :: GTAT 3462	uLys 1104       GAAA 3412	GlnT 1088    : CAAA 3362	luLy 1071       AGAA 3312	9Gln 1054 :    ACAG 3262	SerT 1038    : TCTC 3212	leLe 1021   ::  TTTT 3162

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                                                                                                                                                                                                                       Direct Submission

Direct Submission

Submitted (20-OCT-2000) V. Savonet, Institute of Interdisciplinary Research - ULB, Building C (local C4-124), Campus Erasme, Route de Lennik 808, 1070 Brussels, BELGIUM

On Oct 21, 2000 this sequence version replaced gi:1429313.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                          Research - ULB, Building C

Lennik 808, 1070 Brussels,

revised by [3]

(bases 1 to 4643)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canis familiaris
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae;
1. (bases 1 to 4643)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Identification and characterization of novel thyroid of dogs treated with methimazole and J. Biol. Chem. 271 (45), 28451-28457 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wilkin, F., Savonet, V., Radulescu, A., Petermans, J., Dumont, J.E. and
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Canis familiaris mRNA
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                                                                                                                                       'C3VS"
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RIMEBLKDQLKOWK AKY EGASAVGKLRAD I KONELLVEOFREDEKLVEENKYKKI GE
LSMCET ERDKKGRRVARVEGOVKELLAKLITLSVETEKEVENKSLLSSEVNEKVKKI GE
TEREVEKSLTEIR FOLRRELENCKAKLAGHTK PEELEDGLKSRLEDGRAGELAKKVTELTS
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SKRQSQLIDTLQHQVKSLQQQLADTDRQHQEVIAIYRTHLLSAAQGHMDEDVQAALLQ
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BASE COUNT ORIGIN 1645 1185 g 941

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Quality: Ratio:

6056.00 4.523 95.575

Gaps: Percent Identity:

84.654 1401

Length:

to: CFC3VS

from: 1 to: 4643

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400 1488	nMetTyrMetThrAspSerGlnCysThrSerThrGlyMetProVal              ::   :: 	384 1465
1464		1464
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367 1464	AspH1	351 1423
350 1422	GluGluSerLeu            GAAGAAAGCCTA	334 1373
334 1372	tValAlaAspAspLeuGluSerGluLySGluL 	317 1323
317 1322	LeuAspLysValAsnGlyLeuGlnLeuGl 	301 1273
300 1272	lnAspLeuGluIleGluAsnGluAspLeuLysGluArgLeuArgLysIle	284 [223
284 1222	erAsnGlnArgGluHlsGlnAsnIleG   :::           :::         CAAGTCAGAGGGAGCATCGAAACATTC	267 173
267 1172	nGlnArgAsnLeuSerGlnMe               CAGCGAAATTTGCCGTACAT	251 .123
250 1122	uLysThralaSerGluasnSerAsnLysGlyArg                        aagaCTGGGTCAGAAAATACCAACAAAGGGAGA	234 .073
234 1072	pAlaLeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAspAsnLeuA 2 	217 023
217 1022	A - ii	201 973
200 972	splysGlnAsnArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysLys 2   1414	184 923
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167 372	rProLeuValLeuAlaThrGlnMe                   ACCGCTGGTTCTGGCTACTCAGAT	151 823

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732 2489 749	717 2439	701 2389	684 2339	66 <b>7</b> 2289	651 2239	634 2189	617 2139	601 2089	584 2039	567 1989	551 1939	534 1889	517 1839	501 1789	484 1739	467 1689	451 1639
2 alSerGluGluMetLysLysSerHisAspValIleValAspAspLeuA 	7 nValAsnAsnLeuThrThrGluMetLysAsnValProLeuLy	GlnLysGluIleGluLysValCysLeuAspAsnLysLeuLeuThrGln    ::::::::::	. lyGluLeuGlyLysArgIleThrGluLeuThrSerLysAsnGlnThr           :::   ::::	7 lLysProGluGluHisGluGlnLeuLysSerArgLeuGluGlnLysSe 	ProLeuLysArgGluLeuGluAsnLeuLysAlaLysLeuAlaGlnHis     :::	ysLeuIleAspValGluArgGluTyrGluArgSerLeuAsnGluThrAr   ::: 	eGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGluLysAlaLy      :::                    :::    ::	LeuLysAspLeuSerAlaLysLeuAlaLeuSerIleProAlaGluLys:::   :::                :::	luLeuGluArgGluLysArgGlyArgLysLeuThrGluMetGluGlyG 	yLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMetCy         :::	. GlnIleLysGlnAsnGluMetLeuValGluGluPheLysArgAspGluG 	etlysVallysTyrGluGlyAlaSerAlaGluValGlyLysLeuArgA       :::	aThrGlyAsnHisArgLeuMetGluGluLeuLysAspGlnLeuLysAsp 	MetGlnThrH1sPheLeuAlaLeuLysGluHlsLeuThrSerAspAlaA 	euLysAspValGlnLysArgMetTyrGluSerGluGlyLysValLysG 	uArgVaiLysGluAspSerAspGluGlnIleLysGlnLeuGluAspAla     :::	GluLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluCysG 
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03	982 3239 999 999 3289	932 3089 949 3139 3139 3189	899 2989 915 3039	2839 865 2889 2889 882	815 2739 832 832 2789	
TC GA	'SALA        AGCC 'YFAS 'YFAS   ::	leLeu 	H-H 0-0	GAGGA uLeuv     :    : ATTAC ysile	AAG	HIIII
Teglu Tegage Tegage Tegage Tegage Tegage	Thrs	AlaLys     :::  GCCAAC  lealaAl         TGAAGC 	7::e 2::L	AAAAGAA	YSG1y (GTGGG (GTGGG )LeuLy (HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH	AGCTTTTAGCTTTTAGCTTTTAGCTTTTAGATTTGAAATTTGAAATTTGAAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACTGTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACGTTTAACAGTTTAACAACAACAACAACAAAAAAAA
AGATTT ASSSET	Lysgl	TACA TACA TACA TACA TACA TACA TACA TACA	SAlac       AGCCC rgLys :::::	GAGAAG	luas       AAGA              	TAGA Leuk
TYTGI TCACT TYTGI TYTGI CATGA	Leuly CTAAJ CTAAJ LILII	YSLYSSe:::   ::  GAAAGGG  LYSArgG    :::   AAAAAGG  -  :::   ATTTATC	uTyr       GTAC  erMe  ::    ACAT	GCGCTGA SCGCTGA SLYSLYS SAAGAAA SAAGAAA SAAGAAA SAAGAAA SAAGAAAT	GlnGl CGAGA CGAGA rMets [:::  CCTGA	STCACE ST
Thro ATGC	sGluG       AGAAC AGAAC        	::[]   ::[]   CCAAG CLAAG    	lese       TCAC LysI    :	Cysc Cysc Cysc Cysc	ILYSII	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
SLUARGAT SLUARGAT SLUARGAT SLUARGAT SLUARGAG SLUARGAGG SLUARGAGG SLUARGAGGG SLUARGAGGGG SLUARGAGGGG SLUARGAGGGGG SLUARGAGGGGGG SLUARGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	.nLeus 	uGluI        GGAGA  spThr       -     GLuG1  -     GAAGA	Arg	CGCTC CGCTC ASPI1	AACC nTyr 1111 GTAI	:: TGCGC: TTLeuS:         TTTAA: TTTAA: ::    AACAC: LysGl: ::
TTAAL TTAAL ALeus HIII: ACTCL	rGlnG  :::   GGAGC  ysGln 	TILEVALT TITGTGA TILEGIN TILEG	GluHi        GAGCA nAspA 	GATAA GATAA eAsnG :     CAATC	::LeuM ::Lll: CCTCG alPro !!!!! TGCCG	AGACAA IIIII IIIIII IIIII IIIII IIIII IIIII IIII
ASAPLYS	AGAT	hrLeu	luG1       AAGA       SerA	AAAAAC	STARAG	:::    GCAGCT  SIVALS         ACGTTA    :::    :::  GAGGTC       
ysasny agaarg LysThr    ::: haagca	InLy IIII AAAA AspL IIII	HisGlu	Lysm      AAGA aGlu 	IIIIII NTAGAGA NEVALL IIIIII IIIIII IIIIIIII NTAAA NTHIGIAA	luasn         AAAAC ThrH1        ACCCA	SerArg SerArg SerArg SerArg SerArg SerArg MetAl IIIII MASDL IIIIII
3388 1048 13438 3438	128 128 133	948 3138 965 965 3188 3238	303	2 8 2 8 8	A 832 R 2788 S 848 C 2838	T 2588 T 2588 C 2638 C 2638 T 2688 T 2688 Y 815
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1315 SGlnAla	1089 TGAGG 282 hrile 11111 139 CAATC 299 AlaLy 1189 GCGAA	49 LysLy 39 AGGAA 65 eGluc	.199 LysLy :::   :889 CAAA .215 rLyss          939 AAAA	.65 elleLy ::      ::      ::   ::   ::   ::   :	132 alThr   :::  689 TGGCC  149 LeuAl  111::  739 CTGGG	.099 G1nVa         589 CAAGT        115 SG1uG 	3439 GAAGAG 1065 aLysLy 1089 AAAGAG 1082 luileL 1082   :::
LeuAsnGlyLeuSerGln   Ill:::	GAAATCAAGGATCAGCAG GAAATCAAGGATCAGCAG rGluLeuGlnArgArgII	INA 9LYSTY FOLIGITIVE                                                                     ICGGAAGTATGAAGAAGC  LULGUSERALALYSASPG	eeuGluThracgGluVal	AlaserLeuArgGluI	LeuArgGlnMetLeuG:     :::          CTGCATCAGATGCTAGJ CTHOLOGINVALLYSG UH1SLEUGlnVALLYSG	nAr	CTCAACAACAGTTGAAA SGluLySGluLySLeuVa                TGAGAAGGAGGAAGCTGGT euAlaAlaGlnThrLeuL
euThrTyrGlySerGlySe        CACTTCCCCGAGCGGGAG  SerLeuGlnGlnGlnValA  :::      :::         ACCCTGCAGCACCAAGTGA  PArgGlnH1SGlnGluVal 	AGCGGTGTGATAAGTCCTT AGCGGTGTGATAAGTCCTT GlnGluSerAlaLySGlnI	CYSGLIGIUVALLEUHISF	laspleuSerlysTyrlys 	a−e a−a	luAsnGlnLysAsnSerSerV 	euSerGlyThrIleGluTh   ::::::          TTAACAGCACAATTGAGCA CYSTYrGluLySGluGlnG	ACCTGTTGCAGAAGTACAG GluGluAsnalaLysGlnT :::::     :::    GRCGACAATGCCAGACAGA uGlnLysGlnHisValPrc 
ITCCCA 4288 ITCCCA 4288 ITCCCA 4288 ITCCCA 4388 ITCCCA 4338 ITCAL 1365 ITTCC 4388	 AACAA 413 leGlu 129       TCGAA 418 LeuLy 131 LeuLy 131 CTCAA 423	Ser AGC	AlaTh 121        CCAAC 393  UAlaA 123        GGCCA 398	SThrG 118       AACCG 383 laLeu 119 	ValPro 1148       :  GTGCCC 3738  G1911 1165     :  GGCAT 3788	rLeuLy 1115       /    rCTCAA 3638                       	TGAGAT 34 hrSerG 10        CTTCTG 35 LeuGlu 10

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AB046781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nagase,T., Kikuno,R., Nakayama,M., Hirosawa,M. and Ohara,O. Prediction of the coding sequences of unidentified human genes. XVIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins in vitro DNA Res. 7 (4), 273-281 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
Submitted (03-AUG-2000) Osamu Ohara, Kazusa DNA Research Institute,
Department of Human Gene Research; 1532-3, Yana, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp,
URL:http://www.kazusa.or.jp/huge, Tel:81-438-52-3913,
Fax:81-438-52-3914)
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for KIAA1561 protein,
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                                                 AlaGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSe 473
                                                                                                      MetLeuArgProLeuGluLeuAlaLeuProAsnGlnAlaSerTyrSerGl 423
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| ATGTTAAGACCTCTGGAACTATCTTTACCCAGTCAAACGTCATACTCTGA 246
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                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAAAGCAACATGAAGAAAAGCTTAAGGACTATTGAGGCTCTGAAAAAT
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AGATGAACAGATAAAGCAATTAGAAGATGCATTAAAAGATGTGCAGAAGA
              rAspGluGlnIleLysGlnLeuGluAspAlaLeuLysAspValGlnLysA 490
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804.	${\tt roProGluArgHisGluLysGluMetMetAlaLeuLysSerAsnIleThr}$	788
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3510	:::	3461
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3460		3411
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3260	:::	3211
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3160	:::   :::	3111
640 3110	uLeuSerAsnGluLeuAsnGluLysAlaLysLysLeuIleAspValGluA              ::::::::       ATTATCAAATGAAGTGAATGAGAAAGCAAAAAAATTAGTAGAAATGGAAA	623 3061
623	LysLeuAlaLeuSerIleProAlaGluLysPheGluAsnMetLysSerLe	607
3060		3011
606 3010	rgGlyArgLysLeuThrGluMetGluGlyGlnLeuLysAspLeuSerAla ::             AAGGAAGAAAGGTCACAGAGATGGAAGGCCAGGCAAAAGAATTGTCAGCG	590 2961
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2960		2911
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2810		2761
523 2760	AlaLeuLysGluHlsLeuThrSerAspAlaAlaThrGlyAsnHisArgLe	507 2711
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2710		2661

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IrGluAlaLysLysGluLysGluLy 1071		heLysAlaThrGluLys	uuHisGluGluIleAlaAlaGlnLys 954 	ACACTCAGAACCAAATAAAAGCTGAG 3910 SluLysMetSerGlyLeuArgLysSe 921 SlullysMetSerGlyLeuArgLysSe 921 ScaaaGaTGAGCTCGCTAAGTCAGAG 3960 SCAAAGATGAGCTCGCTAAGTCAGAG 3960 SCALAGLIILLEUALLLYSTYFLYSL 938 SCTGAAATCTTGGCCAACTACAGAA 4010	TAACAGAGAATTATTAGATCTGAAGAA 3810 lluPheVailysileLysaspGluasng 888	CHISGIUGIUTIELYSThrala 854	LULEUASDLYSLYSCYSGLYGLUASPG1 821	::::

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TCCAGATCATACAAATGCGGCAGGGGCTTGTGTGTG
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                                                                                                                                                                              euIleAspSerLeuGlnGlnGlnValArgSerLeuGlnGlnGlnLeuAla 1354
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                                                                                                                                                                                                                                                                      TGATTGACACTCTGCAGCACCAAGTGAAATCTCTGGAGCAACAGCTGGCC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrGluLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLe 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTCGGAGGTTCAGAATACTAAACAAGCATTAAAAAAATTAGAGACTAGA 4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAAAGGAAGAAAGCCAAAACAAAATGGAAGAAGTCTCCAAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gGluLysGluGluSerGlnAsnLysThrGluGluValSerLysLeuG 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LysSerLeuSerGlyThrIleGluThrLeuLysGluGluLeuLysThrLy 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCTTTTGCAAAAACAACATGTTCCATTGGAACAGGTTGAGGCTCTGAAA 4510
                                                                                        TCTTAGTGCTGCACAGGGTCACATGGATGAAGATGTTCAGGAGGCTCTGC
                                                                                                                                                                                                                                                                                                                                                              TTCCCAACTCACCTACACAAGTGGGAACCCCACCAAGAGGCAGAGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGAATACAAGAATCTGCTAAACAAATAGAAGCAAAAGATAATAAGATA 5110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgArgIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIle 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAGAAGGAACGATGTGATAAGTCCTTAACAACAATCACAGAGTTACAAA 5060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pGlnGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGlnA 1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAGATGAGAAGGAATTACTGCATTTCAGCATTGAGCAAGAAATTAAGGA 5010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysaspGluLysGluLeuLeuHisPheSerIleGluGlnGluIleLysas 1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rGlnIleSerAspLeuAsnGluLysLeuAlaAsnLeuAsnArgLysTyrG 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGTAGTTGACTTGTCTAAATATAAAGCAACAAAAAGTGATTTGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lnSerGluIleGlnAsnThrLysGlnAlaLeuLysLysLeuGluThrArg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTGGAGAATCAAAAGAACTCTTCTGTACCCCTGGCAGAGCATTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAAGGTGTTACGAGAAAGAGCAGCAGCAGCAGTGACCAAACTGCATCAAT 4610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATCTCTTAATGGCACAATTGAAAATCTAAAGGAAGAACTGAAGAGTAT 4560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         luGluValCysGluGluValLeuHisAlaLysLysGluLeuSerAla 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGATTTCTAGCTTAAATGAAAAATTGGCCAATCTGAATAGAAAGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTGAACTGCTTAATGATGTGGAAAGATTAAAACAGGCACTCAATGGCCT
  5395
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VERSION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block: LOCUS AC087699 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_htg:AC087699
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TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barna, N., Bastien, V., Boguslavkly, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., Dekrellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dekrellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Dekrellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Bardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Illev, I., Johnson, R., Johnson, B., Hardors, J., Lancazares, R., Landers, T., Lehczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrin, J., Meneus, L., Mihova, T., Mienga, V., McPheeters, R., Meldrin, J., Meneus, L., Mihova, T., McKernan, K., McPheeters, R., Meldrin, J., Morbu, C., Norman, C.H., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C.H., Phunkhang, P., Petersen, N., O'Neil, D., Oliver, J., Petersen, K., Phunkhang, P., Petersen, N., Pollara, V., Raymond, C., Retta, R., Phunkhang, P., Petersen, N., Pollara, V., Raymond, C., Retta, R., Roya, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Sougnez, G., Sentos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Sougnez, M., Trayls, N., Trigillo, J., Vassillev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zalnoun, J., Zembek, L., Zinmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (15-JAN-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 3, 2001 this sequence version replaced gi:12229508. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens chromosome Unpublished
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
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                                                                                                                                                                                                            Sequencing vector: Plasmid; n/a; 100% of reads
Sequencing vector: Plasmid; n/a; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 147637 bases at least Q40
Consensus quality: 147647 bases at least Q20
Consensus quality: 147647 bases at least Q20
Insert size: 149000; agarose-fp
Quality coverage: 10.3 in Q20 bases; agarose-fp
Quality coverage: 10.4 in Q20 bases; sum-of-contigs
NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 148041)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pieces.
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DNA
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                                                                                                                                                                                                                          sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-MAY-2001
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Ratio: 4.433
Percent Similarity: 94.538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to reverse of: AC087699 from: 1 to: 148041
                               525 luGluLeuLysAspGlnLeuLysAspMetLysValLysTyrGluGlyAla 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
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e
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18439 88773: contig of 70335 bp in length

88774 88873: gap of 100 bp

88874 148041: contig of 59168 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             soon as it is available and the accession number will preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector_side:right"
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Identity: 83.508
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<del></del>	575 127734	-	
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-	127584	erAsnGluLeuAsnGluLysAlaLysLesLysLeuIleAspValGluArgGlu 641 	
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	658 127484	nLeuLysAlaLysLeuAlaGlnHisValLysProGluGluHisGluGlnL 675  :::	
	675 127434	euLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLysArgIleThr 691 ::	
- <u>.</u>	692 127384	GluLeuThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysValCy 708          	
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126784
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ysGluAspIleAsnGlnGluPheValLysIleLysAspGluAsnGluIle 889
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                                                                                                                                                                                                                                                                                                                                                                                                        ysLysValGlnAspAsnSerAlaGluIleLeuAlaLysTyrLysLysSer
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GluGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGluGluAl 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         erLeuGluGluCysGluArgLysPheLysAlaThrGluLysGluLeuLys 989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlnGluGluIleValThrLeuHisGluGluIleAlaAlaGlnLysArgGl
                                                                                                                                                                                                                              ThrGluArgAlaLeuSerArgLysThrGluGluLeuAsnArgGlnLeuLy 1056
                                                                                                                                                                                                                                                                                                                                              euGlnLysAspLeuLysAspLysAsnValHisIleGluAsnSerTyrGlu 1039
|||||||||||||:::||| |||||||:::|||
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                                                                                                                                                                                                                                                                                         ATGGAAAGAGCATTAAGCAGAAAAAACAGCGAGCTAAACAACAGTTAAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         956
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TITLE
JOURNAL
REFERENCE
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KEYWORDS
SOURCE
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                                                                                               REFERENCE
                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125984 AGAAGCATTTGAGAAAGAAGTTGGAATCATAAAAGCCAGCTTGAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                     125484 CCACAGAATCTCACAGGAAAGTAGACACAGGTATTAACAAAGTGACCCTT 125435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125734
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                                                                                  AUTHORS
                                                                                                                                         ORGANISM
AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ysGluGluGluSerGlnAsnLysThrGluGluValSerLysLeuGlnSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAACGATGTGATAAGTCCTTAACAACAATCACAGAGTTACAAAGAAGA 125585
                                                                                                                                                                                                                                                                                                                TCCAGT 125429
                                                                                                                                                                                                                                                                                                                                                                                                spValGluArgLeuLysGlnAlaLeuAsnGlyLeuSerGlnLeuThrTyr 1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIle..... 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlySer 1328
                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGTAGTCTGCACGGCTATGTGTTGGAAACCCCCAGAGCAGTGCTCTTTA 125485
                                                                                                                                                                                                                                                                                                                                                                                                                                                     .....ThrGluLeuLeuAsnA 1310
                                      Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutherla; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 155760)
1 (bases 1 to 155760)
Rowen, L., Madan, A., Qin, S., Baradarani, L., Birditt, B., Bloom, S.,
Dors, M., Dickhoff, R., Fleetwood, P., Harrison, G., Kaur, A., Madan, A
Nesbitt, R., Traicoff, R. and Hood, L.
Sequencing of human chromosome 15 D15S114-D15S115 region
                                                                                                                                                                                                              Homo sapiens chromosome 15 c
SEQUENCE, 19 ordered pieces.
                                                                                                                                                                     ACO10076.5 GI:9957994
HTG; HTGS_PHASE2; HTGS_DRAFT.
Rowen, L., Madan, A.,
                         Unpublished
(bases 1 to 155760)

(bases 1 to 155760)
                                                                                                                                                                                                                                             155760 bp
                                                                                                                                                                                                                          DNA
15 clone
  ŝ
    Abbasi, N.,
                                                                                                                                                                                                                                 HTG
RP11-64K10,
     Baradarani, L.,
                                                                                                                                                                                                                                 01-SEP-2000
WORKING DRAFT
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COMMENT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     * consists of 19 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

* This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* 39368 contig of 39368 bp in length

* 39469 4956: cantig of 4488 bp in length

* 39469 4956: contig of 4488 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence Quality Assessment:
This entry has been annotated with sequence quality estimates computed by the Phrap assembly program.
All manually edited bases have been reduced to quality
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bloom, S., Dors, M., Dickhoff, R., Harrison, G., James, R., Lasky, S., Madan, A., Ratcliffe, A., Shaffer; T. and Hood, L.
Direct Submission
Submitted (11-SEP-1999) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA
On Sep 1, 2000 this sequence version replaced gi:8312412.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Base-by-base quality values are not generally visible GenBank flat file format but are available as part of this entry's ASN.1 file.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality levels above 40 are expected to have less than 1 error in 10,000 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOTE: This is a 'working draft' sequence. It currently
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101926
                                     133130
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123179
                                                                                  129111
                                                                                                                                                                                           98003
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Chemistry: Dye-terminator Big Dye; 90% of reads
Chemistry: Dye-primer Big Dye; 10% of reads
Assembly program: Phrap; version 0.990399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: leerowen@systemsbiology.org
                                                                                                                                              07780
                                                                                                                                                                                                                                                                                                                                 61883
75900
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://chroma.mbt.washington.edu/msg_www
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of 3499
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alignment_block:
US-09-750-590-2 x AC010076/rev
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Ratio: 4.270
Percent Similarity: 86.628
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                                                     134488 GATTACAGAAGGAACTTAGTATGTGTGAAATGGAGCGAGAGAAGAAAGGA 134439
                                                                                                                                                                                                                                                                                                                                                                                                                 134738 TATGAGTCAGAAGGTAAAGTTAAACAAATGCAGACCCATTTTCTTGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134888 AAACAAGACCGACTGAAGCTCCAAAATGAACTGGCACACAAAGTGGCAGA 134839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135038 CAGTGTACTTCCCCCAGGTATACCAGCCCATATGCAAAGCAGATCTATGTT 134989
592 ArgLysLeuThrGluMetGluGlyGlnLeuLysAspLeuSerAlaLysLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408 uArgProLeuGluLeuAlaLeuProAsnGlnAlaSerTyrSerGluAsnG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      392 GlnCysThrSerThrGlyMetProValHisMetGlnSerArgSerMetLe 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                           AGTAGAAGAGTTTAAGAGGGATGAAGGCAAGCTGATAGAAGAAAATAAGC 134489
                                                                                                                                              uValGluGluPheLysArgAspGluGlyLysLeuMetGluGluAsnLysA 575
                                                                                                                                                                                                                                                                      TyrGluSerGluGlyLysValLysGlnMetGlnThrHisPheLeuAlaLe
                                                                          rgLeuGlnLysGluLeuSerMetCysGluLeuGluArgGluLysArgGly 591
                                                                                                                                                                                                                    SerAlaGluValGlyLysLeuArgAsnGlnIleLysGlnAsnGluMetLe
                                                                                                                                                                                                                                                                                                                                              TAAAGAACACTTAACAAGTGAAGCAGCCTCAGGGAATCACAGACTAACCG
                                                                                                                                                                                                                                                                                                                                                                             uLysGluHisLeuThrSerAspAlaAlaThrGlyAsnHisArgLeuMetG
                                                                                                                                                                                                   ATGCAAAGCTTTAGCATTAGAATGTGAAAGGGTCAAGGAGGATTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSerAspG 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysValAlaG1 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACCTCTGGAACTATCTTTACCCAGTCAAACGTCATACTCTGAAAATG 134939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45760 a
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141597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="RP11-64K10"
/clone_lib="RPCI human BAC library 11"
/33275 c 32273 g 42185 t 2267 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1. .155760
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps: 7
Percent Identity: 75.484
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134438	TTGTCAGCGAAGTT	Ĺ.
608 134388	UAlaLeuSerIleProAlaGluLysPheGluAsnMetLysSerLeuLeuS	625 134339
625 134338	@rAsnGluLeuAsnGluLysAlaLysLysLeuIleAspValGluArgGlu          :::                   ::::::::	641 134289
642 134288	TyrGluargSerLeuAsnGluThrArgProLeuLysArgGluLeuGluAs :::    :::      :::	658 134239
658 134238	nLeuLysAlaLysLeuAlaGlnHisValLysProGluGluHisGluGlnL  :::	675 134189
675 134188	euLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLysArgIleThr :::  {	691 134139
692 134138	GluLeuThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysValCy 	708 134089
708 134088	SLOUASPASHLYSLOULOUTHYGINGINVAIASHASHLOUTHTTHYGIUM	725 134039
725 134038	etLy8AsnValProLeuLy8ValSerGluGluMetLy8Ly8Ser          	739 133989
740 133988	H18A9PV8111eV81ASPASPLEUASRLYSLEUSERASPV81ThrH1                :::     :::          CATGATGCAATTATTGATGATCTTAATAGAAAGCTTTTAGATGTAACACA	756. 133939
756 133938	SLYSTYrThrGluLysLysLeuGluMetGluLysLeuLeuMetGluAsnA:	773 133889
773 133888	laSerLeuSerLysAsnValSerArgLeuGluThrValPheIleProPro	789 133839
790 133838	GluArgHisGluLysGluMetMetAlaLeuLysSerAsnIleThrGluLe    :::       ::::        GAGAAACATGAAAAAGAGATAATAGCTCTGAAATCCAATATTGTTGAACT	806 133789
806 133788	uLysLysGinLeuSerGluLeuAsnLysLysCysGiyGluAspGlnGluL 	823 133739
823 133738	ysIleTyrSerLeuMetSerGluAsnAsnAspLeuLysLysThrMetSer      ::::::             ::::::	839 133689
840 133688	H1sGlnTyrValProValLysThrH1sGluGluIleLysThrAlaLeuSe::::	856 133639
856 133638	rSerThrLeuAspLysThrAsnArgGluLeuValAspValLysLysLysC::::	873 133589
873 133588	ysGluAspIleAsnGlnGluPheValLys1leLysAspGluAsnGluIle 	889 133539
890 133538	LeuLysArgAsnLeuGluAsnThrGlnAsnGlnValLysAlaGluTyrI1 	906 133489

1111 132638	1094 132688	1078 132738	1062 132788	1045 132838	1040 132888	1029 . 132938 .	1018 132988 .	133038	1017	133088 1	1017	138	1017 .	1006 a : 133188 C	990 G : 133238 G	973 e       133288 G	956 u       133338 G	940 G 1 133388 C	923 y : 133438 G	906 e 1 133488 C
leGluThrLeuLysGluGluLeuLysThrLysGlnArgCysTyrGluLys      :::                ::: TTGAAAATCTAAAGGAAGAACTGAAGAGTATGCAAAGGTGTTACGAGAAA	SValProLeuGluGlnValGluSerLeuLysLysSerLeuSerGlyThrI 	LysGlnThrSerGluIleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHillIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	TyrThr.GluAlaLysLysGluLysGluLysLeuValGluGluAsnAla.	erargLysThrGluGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLys		AspLysAsnValHisIleGluAsnSerTyrGlu		AATTTTAGCCACGGGAGGCCT		NNNNNNNNNNNNNNNN		GAAATCAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN		LysLysCysLysGlnGluAsnAspLysLeuLys		rLeuGluGluCysGluArgLysPheLysAlaThrGluLysGluLeuLys 9  :::	LeuAspThrIleGlnGluCysIleLysLeuLysTyrAlaProIleIleS 9                            ::	InGluGluIleValThrLeuHisGluGluIleAlaAlaGlnLysArgGl 9 	SLYSValGlnAspAsnSerAlaGluIleLeuAlaLysTyrLysLysSer 9 :          :::   :               :::   ::: AAAGGTGCAGGATAGTAATGCTGAAATCTTGGCCAACTACAGAAAAGGC 1	SerLeuArgGluHisGluGluLysMetSerGlyLeuArgLysSerMetL 9 
1127 132589	1111 132639	1094 132689	1077 132 <b>73</b> 9	1061 132789	1045 132839	1039 132889	1028 132939	132989	1017	133039	1017	133089	1017	1017 133139	133189	189	)73  33289	)56 .33339	33389	33439

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VERSION
KEYWORDS
                                                                                                                                 REFERENCE
                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                  seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                         seq_name: gb_pr:AK000990
                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                     ORGANISM
                                                                                                               AUTHORS
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                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAAAGTAGACACAGGTATTAACAAAGTGACCCTTTCCAGT 131947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCTATGTGTTGGAAACCCCCAGAGCAGTGCTCTTTACCACAGAATCTCAC 131989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .....ThrGluLeuLeuAsnAspValGluArgLeu 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGTCCTTAACAACAATCACAGAGTTACAAAGAAGAATACAAGAATCTGC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LysSerLeuThrThrIleThrGluLeuGlnArgArgIleGlnGluSerAl 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTGCATGCCAAAAGAAGGAAATATCTGCAAAAGATGAGAAGGAATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GluLysLeuAlaAsnLeuAsnArgLysTyrGluGluValCysGluGluVa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATATAAAGCAACAAAAAGTGATTTGGAGACACAGATTTCTAGCTTAAAT 132289
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Nishikawa,T., Nagai,K., Sugano,S., Shiratori,A., Sudo,H., Wagatsuma,M., Hosoiri,T., Kaku,Y., Kodaira,H., Kondo,H., Sugawara,M., Takahashi,M., Chiba,Y., Ishida,S., Murakawa,K., Ono,Y., Takiguchi,S., Watanabe,S., Kimura,K., Murakami,K., Ishii,S., Kawai,Y., Saito,K., Yamamoto,J., Wakamatsu,A.,
                                                                                                                                                                            AK000990.1 GI:7021992 oligo capping; fis (full insert sequence). Homo sapiens embryo, 10 weeks whole embryo, mainly head cDNA to mRNA, clone_lib:HEMBAI clone:HEMBA1002997.
                                                                                                 Isogai, T., Ota, T., Hayashi, K.,
                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                               AK000990 1628 bp mRNA PRI 22-FEB-2000
Homo sapiens cDNA FLJ10128 fis, clone HEMBA1002997, weakly similar
                                                                                                                                                                                                                                                                                           to CENTROMERIC PROTEIN
                                                                                                                           (sites)
                                                                                                                                                                                                                                                                                           EZ
                                                                                               Sugiyama, T., Otsuki, T.,
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                                                                                               Suzuki,Y.
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alignment_block:
US-09-750-590-2 x AK000990
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                                                                                                                                                                                                                                                                                                                                                                                                    631 LysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeuAs
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nGlnThrLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuL
                                                                                                                              GlnLysSerGlyGluLeuGlyLysArgIleThrGluLeuThrSerLysAs
                                                                                                                                                                                                                                                                                      CAGAAATCAGGAGAACTTGGGAAGAAGATCACTGAGTTAACATTGAAAAA
                                                                                                                                                                                                                                        CTCAGCACGTCAAACCAGAGGAACATGAACAGGTTAAGAGCAGATTAGAA
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NEDO human CDNA sequencing project supported by Ministry of International Trade and Industry of Japan; CDNA full insert sequencing: Research Association for Biotechnology; CDNA library construction, 5'- & 3'-end one pass sequencing and clone selection: Helix Research Institute (supported by Japan Key Technology Center University of Tokyo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 1628)
Isogai,T. and Otsuki,T.
Direct Submission
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NEDO human cDNA sequencing
Unpublished (2000)
2 (bases 1 to 1628)
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/tissue_type="whole embryo, mainly head"
/note="cloning vector: pME18SFL3"
22. .>1628
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/db_xref="taxon:9606"
/clone="HEMBA1002997"
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/codon_start=1
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DNA sequencing project
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Percent Identity: 81.734
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||||||||||||||:::|||||||||||||
|CTAACAGAGAATTATTAGATGTGAAGAAAAAATTTGAAGATATAAATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ValSerArgLeuGluThrValPheIleProProGluArgH1sGluLysGl 795
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|||||||||||||||||||||||
|| GAATTTGTAAAAATAAAAGATAAGAATGAAATATTAAAAAGAAACCTGGA
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                                                                                                                          nThrGlnLysTyrAsnThrSerGluGluGluAlaLysLysCysLysGlnG
|||||||||||||
                                        ATGCTGAAATCTTGGCCAACTACAGAAAAGGCCAAGAAGAGATTGTGAC
                                                                                                                                                                            SerAlaGluIleLeuAlaLysTyrLysLysSerGlnGluGluIleValTh 945
                                                                                                                                                                                                                       ANACACTCAGAACCAAATAAAAGCTGAGTACATCAGCCTGGCAGAGCACG
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                                                   ArgLysPhoLysAlaThrGluLysGluLeuLysGluGlnLeuSerGlnGl
                                                                                  AATGCATTAAGGTAAAATATGCCCCAATTGTCAGCTTTGAGGAGTGCGAG
                                                                                            luCysIleLysLeuLysTyrAlaProIleIleSerLeuGluGluCysGlu
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DEFINITION
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LOCUS AB037755
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                                                                                                                                                                                                                                                                                                                                         SOURCE
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| TCCATTGGAACAGGTTGAGGCTCTGAAAAAATCTCTTAATGGCACACATTG
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|TTCTGTACCCCTGGCAGAGCATTTGCAGATTAAAGAAGCATTTGAGAAAG
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                                                                                                                                                                         Nagase, T., Kikuno, R., Ishikawa, K.I., Hirosawa, M. and Ohara, O. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain witro code for large proteins in vitro DNA Res. 7 (1), 65-73 (2000)
                                                                                                                                                                                                                                                                                                                                                                  AB037755 5043 bp
Homo sapiens mRNA for H
AB037755
AB037755.1 GI:7243048
                                                      Submitted (31-JAN-2000) to the DDBJ/EMBL/GenBank databases. Osamu ohara, Kazusa DNA Research Institute, Laboratory of DNA Technology; 1532-3 Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, URL:http://www.kazusa.or.jp/huge/, Tel:+81-438-52-3913, Fax:+81-438-52-3914)
                                                                                                                                                                                                                                                                                                                        Homo sapiens brain clone:fh15842.
                                                                                                                                Ohara,O., Nagase,T. and Kikuno,R. Direct Submission
                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                            (bases 1 to 5043)
                           Location/Qualifiers
1. .5043
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                  bp mRNA
for KIAA1334 protein,
                                                                                                                                                                                                                                                                                                                                         cDNA to mRNA, clone_lib:pBluescriptII SK plus
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Ratio: 1.789
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133 sProSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaL 150
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497 CCAAGATACTACCGGACACAGCGCCTTACATCTCGCAGCCAAGAACAGCC 546
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447 CACGTGGAATGCCTCAGGGTCATGATTACACATGGTGTGGATGTGACAGC 496
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                                                                                                           ValAspLeuGlnGlyArgThrAlaLeuHisAspAlaAlaMetAlaAspCy 133
                                                                     GTTGACAGCTCTGGGAAAACAGCTTTACATTATGCAGCGGCTCAGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1591
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/clone_lib="pBluescriptII SK plus"
/tissue_type="brain"
228. .3197
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<228. .3197
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Percent Identity: 26.108
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16	ProLeuGluLeuAlaLeuP 4
501	*** GINGLYGINMETTYTMETThrAspSerGlnCysThrSerThrGlyMetPr 3     :::
454	169 lySerGlySerHisPheArgLysGluAspMetLeuLeuLys 3
404	
352 L357	ο ω
338 1307	27 spleuGluSerGluLysGluLysLeu
327 1257	10 sValAsnGlyLeuGlnLeuGlnLeuAsnGluGluVs ::::::    41 TACTACAGGT
310 1240	94 LysGluArgLeuArgLysIleGlnGlnGluGlnArgIleLeuLeuAspLy
293 1190	77 lnArgGluHisGlnAsnIleGlnAspLeuGluIleGluAsnGluAspLeu ;;; ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
277 1146	260 nGlnArgAsnLeuSerGlnMetLeuAspGluValAsnThrLysSerAsnG::::     ::::::::::::::::::::::::::::
260 1096	44 GluAsnSerAsnLysGlyArgGluLeuTrpLysLysGlyProSerLeuGl 
243 1046	0
239 996	33 uAspIleLeuThrLeuLeu
233 946	17 AspAlaLeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAspAsnLe
216 896	00 ys
200 846	183 gAspLysGlnAsnArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysL  :::   ::::
183 796	167 ProThrIleCysGlnLeuLeuIleAspArgGlyAlaAspIleAsnSerAr         ::::   :::   :::
166 746	10         ysaspValaspGlyargThrProLeuValLeuAlaThrGln
696	647 CCTTCAAGCTGTGCAGATTCTCTGCGAACACAGAGGCCCCATAAACCTCA

N	1842	S	1842
	716	rLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLeuThr	699
_	1841	CTGAG	1827
	699	SerGlyGluLeuGlyLysArglleThrGluLeuThrSerLysAsnGln7	683
01	682 1826	15VallysProGluGluHisGluGlnLeuLysSerArgl     :::      :::  GTCTCACCTGAAAGCATGGATAATTATTCACATTTCC	666 1785
-	7	CCTTAGTGTGCAGAAGCAGATGAAACTCGGTC	Un a
	6	rargProieulvsArgGluIeuGluAsnLeuLvsAlaLvsLeuAlaGln	<b>A</b>
Ü	649 1750	LysLysLeuIleAspValGluAr	633 1701
	1700		1700
	632	ysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGlu	616
Ū	1700	ACAGCTCTGACCTCAGC	œ
	616	lnLeuLysAspLeuSerAlaLysLeuAl	599
·	1681	ArgelubysArgelyArgbysLeu	1668
	0		
	89	LysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuS	6
	1667		1664
	566	AsnGlnIleLysGlnAsnGluMetLeuValGluGluPheI	549
	1663	::: ::::::          :::	N
	49	.spMetLysValLysTyrGluGlyAlaSerAlaGlu	ا ت
	1622		1622
	532	ds	516
	Ġ.		<u> </u>
	516	nMetGlnThrHisPheLe	499
	6		1563
	99	laLeuLvsAspValGlnLvsArgMetTvrGluSerGluGlyLys	483
	482 1562	ysGluargVallysGluaspSerAspCluGlnIleTysGlnLeuGluAsp ysGluargVallysGluaspSerAspCluGlnIleTysGlnLeuGluAsp	466 1524
	ហ		1523
	466	uLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluC	449
	1523		1523
	449	.aMetArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuGl	433
	1523		1523
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	1523	AATACATTCTTTAGGTAAATCC	1502

2135	GCCAGTGATGAAGCT	2121
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2120	ACACTAAAAAGTCAGATGACACAGGAA	2094
999	AlaThrGluLysGluLeuLysGluGlnLeuSerGlnGlnThrGlnLysTy	983
2093		2093
982	$\verb"euLysTyrAlaProIleIleSerLeuGluGluCysGluArgLysPheLys"$	966
2093		2093
966	$\tt uileAlaAlaGlnLysArgGluLeuAspThrIleGlnGluCysIleLysL$	949
2093	LeuAlaLysTyTLysLysSerG.InGluciullevalIniLeunissius. :::       :::              :::     ::: TTTGAGAAATACCAAGAAGCCCCAAGAAGAAATCATGAAATTAAAAGAC	933 2046
2045	, 4	2034
932	erGlyLeuArgLysSerMetLysLysValGlnAspAsnSerAlaGluIle	916
2033		2033
916	${\tt nGlnValLysAlaGluTyrIleSerLeuArgGluHisGluGluLysMetS}$	899
2033		2033
668	IleLysAspGluAsnGluIleLeuLysArgAsnLeuGluAsnThrGlnAs	883
2033		2033
882	euValAspValLysLysCysGluAspIleAsnGlnGluPheValLys	866
866 2033	uGluIleLysThrAlaLeuSerSerThrLeuAspLysThrAsnArgGluL     :::   ::::     ::::   :::     GAAATGAAAAGTTCATATTGCTCTGTTATTGAGAATATGAATAAGGAG.	849 1985
1984		1968
849	JouryalvalvathrmetSerHisGlnTvrValProValLv9ThrHisGl	1967
1067	spGlnGluLysIleTyrSerLeuMetSerGluAsnAsn	816
1967		1967
816	uLysSerAsnIleThrGluLeuLysLysGlnLeuSerGluLeuAsnLysL	799
1967	AAAGGTACAGTGATTAAGCCA	1947
799	ProProGluArgHisGluLysGluMetMetAlaLe	783
782 1946	luLysLeuLeuMetGluAsnAlaSerLeuSerLysAsnValSerArgLeu           :::                     :::                   AGGAAAAACTGGTAGAG       AGGGAG	766 1924 .
1923		1905
766	pValThrHisLysTyrThrGluLysLysLeuGluMetG	49
749 1904	SerGluGluMetLysLysSerHisAspValIleValAspAspLeuAsnLy	733 : 1890 .
1889	CATTAGAAGAA	1843
732	lProLeuLysVal	716

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2312
                                      CTCTGAGAGCTCTTCAAAACTGGAGGAAGATAAAGATAAAAGATAAATG
                                                                  gIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIleThrG
luLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSer
                                                                                                                           CTGCAAAAATTCCAGCAAGCTCAGGAAGAACTTGCAGAAATGAAAAGATA
                                                                                                                                                                GlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGlnArgAr 1289
                                                                                                                                                                                                                lu.....LeuLeuHisPheSerIleGluGlnGluIleLysAspGln
                                                                                                                                                                                                                                                                                                  AGAGGTTGTCCAGATTAGAAGTGAGGTCTCACAGGTGAAAAGAGAAAAAGG
                                                                                                                                                                                                                                                                                                                                     uGluValLeuH1sAlaLysLysLysGluLeuSerAlaLysAspGluLysG 1259
                                                                                                                                                                                                                                                                                                                                                                                       TTGGCATCGAAATTAAAGGAATCTGTGAAAGAGAAAGAGAAAGGTCCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                   LeuAsnGluLysLeuAlaAsnLeuAsnArgLysTyrGluGluValCysGl 1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 euSerLysTyrLysAlaThrLysSerAspLeuGluThrGlnIleSerAsp 1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGAGAAAGCTGCTATG.....ACTGATGCAATGGTACCTC 2610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nAsnThrLysGlnAlaLeuLysLysLeuGluThrArgGluValValAspL 1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCTTGCAAGCAAGGAAGTGGAAGTAGCAAAGCTGGAGAAACAACTCTT 2572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCGGACTGCAGCAAAAGAGATGGAAGAAAAAATAAGCAATCTTAAGGAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uAlaGluHisLeuGlnValLysGluAlaPheGluLysGluValGlyIleI 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAAATGAAGTCTCAG.....TATTCAAAAGTGTTGAATGAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCAGCTCAAACAACTGGTGGATGCACAAAAAGAGAACTCTGTCTCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ThrGlnLeuArgGlnMetLeuGluAsnGlnLysAsnSerSerValProLe 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHisValProLeuGluGl 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           luGluLeuLysThrLysGlnArgCysTyrGluLysGluGlnGlnThrVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGACAAACGTGTCCAGGGCTAAAGCA......GAAGATGCACTGT 2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nValGluSerLeuLysLysSerLeuSerGlyThrIleGluThrLeuLysG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGTCACAGCTGAATATATCCATAAAGCAGAGCATGAGAAACTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ysLysGluLysGluLysLeuValGluGluAsnAlaLysGlnThrSerGlu 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAACTCAATAAACAGGTGAGCGAGCTGTCACAGCTGTACAAAGAAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTyrThrGluAlaL 1066
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MEDLINE
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                                                                                                                                                                                                                                                                                                                                                                  source
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_pr:AF155135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo Saplens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

1 (bases 1 to 4925)
Kutty,R.K., Kutty,G., Samuel,W., Duncan,T., Bridges,C.C.,
El-Sherbeeny,A., Nagineni,C.N., Smith,S.B. and Wiggert,B.
Molecular characterization and developmental expression of NORPEG a novel gene induced by retinoic acid
J. Biol. Chem. 276 (4), 2831-2840 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                Kutty, R.K., Kutty, G., Samuel, W., Duncan, T. and Wiggert, B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF155135 4925 bp mRN
Homo sapiens novel retinal
mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                             Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
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                                                                                                                                                                                                                                       NORPEG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
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BASE COUNT ORIGIN alignment\_block: US-09-750-590-2 x AF155135 alignment\_scores Ouality: 1248.50 Ratio: 1.786 Percent Similarity: 49.191 Align seg 1/1 to: AF155135 304 254 204 154 183 604 167 554 150 504 133 454 117 404 100 17 654 50 3 67 CACGTGGAATGCCTCAGGGTCATGATTACACATGGTGTGGATGTGACAGC AspTrpAsnLysTyrAspAspArgLeuMetArgAlaAlaGluArgGlyAs
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:::::|||||||||:::||||||||| ProThrIleCysGlnLeuLeuIleAspArgGlyAlaAspIleAsnSerAr 183 Length: Gaps: Percent Identity: 1 from: 1 to: 4925 26.038 353 83 66 253 50 203 233 200 603 166 753 703 653

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7		1762
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516		499

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lyGluAspGlnGluLysIleTyrSerLeuMetSerGluAspAsp 832
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of Medicine, 2-2 Yamada-oka, Suita, Osaka
Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (06-NOV-1999) Department of Molecular Biology and Biochemistry, Osaka University Graduate School of Medicine/Faculty
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548 1536	AAGGAAACCCAGAGCAAGTACGAAGAGGCCATGAAAGAAGTCCTGAGCGT	1487
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGTAAGAAACACCACCAGGAGGTCATCTCAGTTTACAGAATGCATCTT 2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPAlaAspArgGlnHisGlnGluValIleAlaIleTyrArgThrHisLeu 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGATCCTCACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LeuSerAlaAlaGlnGlyHisMetAspGluAspValGlnAlaAlaLeuLe 1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGCAGCTCTCCTAC...TCCACAAGTTCATCCAAGAGGCAGAGCCAGCA 2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SerGlnLeuThrTyrGlySerGlySerProSerLysArgGlnSerGlnLe 1338
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sGluGluValLeuHisAlaLysLysLysGluLeuSerAlaLysAspGluL 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGACAACATCCAGACTCTCTTGAAAGCCAAAGAGCAGGAAGTAACTGCG
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentla; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 4879)
Rutty, R. K., Kutty, G., Samuel, W., Duncan, T., Bridges, C.C.,
El-Sherbeeny, A., Nagineni, C.N., Smith, S.B. and Wiggert, B.
Molecular characterization and developmental expression of NORPEG,
a novel gene induced by retinoic acid
J. Biol. Chem. 276 (4), 2831-2840 (2001)
2 (bases 1 to 4879)
2 (bases 1 to 4879)
Kutty,R.K., Kutty,G. and Wiggert,B.
Direct Submission
Submitted (02-JUN-2000) Room 338, LRCMB, National Eye Institute,
National Institutes of Health, 6 Center Drive, MSC 2740, Bethesd
                                                                                                            a novel g
J. Biol.
21264742
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Mus_musculus NORPEG-like protein
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sProSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaL 150
                                                                                            ValAspLeuGlnGlyArgThrAlaLeuHisAspAlaAlaMetAlaAspCy 133
                                                                                                                                                                                                                                                                                       TGCTGAGAAGGTGGCCTCACTGCTGGGCAAGAAAGGGGGCCAGCGCCACGA
                                                    ATTGACAACTCGGGGAAAACAGCTTTGCATTATGCAGCGGCACAGGGATG
                                                                                                                                                                         ACCCAGAGTGCATCAGGAAGCTTCTTCAGTACAAGAGCCCAGCGGAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                         CACGTGGAATGCCTCAAGGTCATGGTGACACACGGTGTGGATGTGACTGC
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                                                                                                                                                                                                       isAlaLeuCysLeuGlnLysLeuLeuGlnTyrAsnCysProThrGluHis 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YSLeuAspValGluGlyArgSerAlaPheHisValValAlaSerLysGly
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Ratio: 1.747
milarity: 48.383
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RAQBELJAGMRCSSTSSKLEEDKDEKINEMTSVLKLKEALNSLSQLSYSTSSSKRQS
G01.DIJ AGOOVKOI JACCK HUNDFU SUVDAMHILT VAUGGAMARDANDENS
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401	385 1424	368 1374	352 1324	339 1274	327 1224	310 1207	29 <b>4</b> 1157	277 1113	260 1063	244 1013	240 963	233 913	217 863	200 813	183 763	167 713	150	613 (
1 sMetGlnSerArgSerMet ;	5 GlnMetTyrMetThrAspS ;;; 4 AAAGCTAGTGACATCCCTT	euGlySerGlySerH1sP :::::     GCTTTCAGTCTTTCCATT	7 TAAATTGCAGGCCAAATCG	LeuAlaAlaLySGluLySG                 :   TTGCAAGCAAAAGTCGCTT	spLeu ::    GCTTGTTGGATAT	BValAsnGlyLeuGlnLeu ::::     TACTGCAGGT	LysGluArgLeuArgLysI     ::::: AAGGCTGAGATCAGCTCCA	lnArgGluHisGlnAsnIl	nGlnArgAsnLeuSerGln: ::::      ::: TCCTACCCAGTTGAGTGAF	GluAsnSerAsnLysGlyArg	Ç :	uAspIleLeuThrLeuLeu.     :::       AGGAATTCAAAACCTTCTAT	AspAlaLeuGlyHisAspSe    :::         ::::  GATTCTCTCGGACACAATGC	ysAspAlaValGluValLeu :::::::   :::::    CGAACACTGTGGACGCCTTA	gAspLysGlnAsnArgThrA        :::::        agacaaaaaTggaagaaCTg	ProThrIleCysGlnLeuLe	yBASDValASDGlyArgThr	CCTTCAGGCTGTACAGCTCC
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418	401	384 1423	368 1373	351 1323	338 1273	327 1223	310 1206	293 1156	277 1112	260 1062	243 1012	239 962	233· 912	216 862	200 812	183 762	166 712	662

<pre>rhrLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLeuT 715</pre>	698 nThri       1831 AGAC(	
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lnHisValLysProGluGluHisGluGlnLeuLysSerArgLeuGluGln 681	665 lnHis	
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	1795	
AlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeuAsnGl 648	632 AlaLy	
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lnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIleProAlaG 615     :	598 uGlyG	
	1768	
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; ;	1729 GCAGA	
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sGluAspSerAspG	-	
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uLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluCysGluA 468	451 uLeuAl	
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ArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuGlnAsnGl 451	435 ArgThr	
GCATCGGCGG 1484	1474 GCAT	

. 715 hrGlnGlnValAsnAsnLeuThr	hrGlnGlnValAsnAsnLeuThrThrGluMetLysAsnValProLeuLys 731
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732 ValSerGluGluMetLysLysSe	sSerHisAspValIleValAspAspLeuAs 748
1852	
748 nLysLysLeuSerAspValThrH	nrHisLysTyrThrGluLysLysLeuGluM 765
1852	
765 etGluLysLeuLeuMetGluAsn	nAlaSerLeuSerLysAsnValSerArg 781
1853GAAAGT	GAAAGTGCAAGGAACAAGGAGCGGGTGCGGGAG 1885
LeuGluThrValPheI	leProProGluArgHisGluLysGluMetMetAl 798
:	
aLeuLysSerAsnIleThrG	luLeuLysLysGlnLeuSerGluLeuAsnL 815
	.GCGGAGAAGGAGCAAGCGACTA 1928
	luLysIleTyrSerLeuMetSerGluAsn 831
AUCCA	
1934	erHisGlnTyrValProValLysThrH1 848
848 sGluGluIleLysThrAlaLeuSe	uSerSerThrLeuAspLysThrAspArgc 865
1948 TGAGGAGCTGAGAAGTTCCTACTG	TGAGGAGCTGAGAAGTTCCTACTGCTCTGTTATCGAGAATATGAATAAGG 1997
865 luLeuValAspValLysLysLysC	luLeuValAspValLysLysLysCysGluAspIleAsnGlnGluPheVal 881 
1998 AG	
882 LysIleLysAspGluAsnGluIle	nGluIleLeuLysArgAsnLeuGluAsnThrGl 898
1999	
898 nAsnGlnValLysAlaGluTyrIl	rIleSerLeuArgGluHisGluGluLysM 915
1999	
915 etSerGlyLeuArgLysSerMetLy	sLysValGlnAspAsnSerAl
2000	
932 IleLeuAlaLysTyrLysLysSer	<pre>yrLysLysSerGlnGluGluIleValThrLeuHisGl 948   ::::::::                           </pre>
uIleAlaAla	onuncional of 65
2059 C	
965 ysLeuLysTyrAlaProIleIleS	SerLeuGluGluCysGluArgLysPhe 981
2059	•
Ę.	sGluG
2060ACGCTAAAAAAG	AAAGTCAGATGCCACAGGAAGCCCCC 2092
998 sTyrAsnThrSerGluGluGluAl	aLys
2092	

1305 hrGluLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeu 1321
821 ATGCTCTGAGACCTCGTCGAAGCTGGAGGAGGATAAAGATGAAAAGATAA 2
ArgIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLy
1272 GlnGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGlnAr 1288 :::::: :::::::::::::::::::::::::::::
258 ysg1   :: 721 AGGA
241 sGluGluValLeuI :::       671 TTCCGAGGTGGCCC
225 A
208 571
191
179 483
5 leIl :: 3 CGCT
1148 oLeuAlaGluHisLeuGlnValLysGluAlaPheGluLysGluValGlyI 1165 ::::::
132 ValThrGlnLeuArgGlnMetLeuG :::         :::    354 TTGACTCAGCTCAAACAGCTGGTGG
1115 ysGluGluLeuLysThrLysGlnArgCysTyrGluLysGluGlnGlnThr 1131 :::   :::   ::::   2313 TGTCGGAGATGAAGTCTCAGTATTCCAAAGTGTTGAACGAG 2353
1098 uGlnValGluSerLeuLysLysSerLeuSerGlyThrIleGluThrLeuL 1115 :::   :::::  :::::::::::
2 GlulleLeuAlaAl          CTGGAAGATGCAGC
184
1048 rGluGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTyrThrGluA 1065 :::           ::::::::
1032 ValHisIleGluAsnSerTyrGluThrGluArgAlaLeuSerArgLysTh 1048
1013 ysLeuLysLysGluIleLeuThrLeuGlnLysAspLeuLysAspLysAsn 1031

		REFERENCE 1 (bases 1 to 83775)  AUTHORS Rowen,L., Madan,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Bloom,S., Dors,M., Dlokhoff,R., Fleetwood,P., Harrison,G., James,R., Kaur,A., Madan,A., Owen,M.P., Ratcliffe,A., Shaffer,T.  TITLE sequencing of human chromosome 15 D15S146-D15S117 region REFERENCE (bases 1 to 83775) ROYEN,A., Qin,S., Abbasi,N., Baradarani,L., Birditt,B., Bloom,S., Dors,M., Dlokhoff,R., Fleetwood,P., Harrison,G., James,R., Kaur,A., Madan,A., Owen,M.P., Ratcliffe,A., Shaffer,T.	seq_name: gb_htg:AC022466  seq_documentation_block:     AC022466    83775 bp	1355 spAlaAspArgGlnHisGlnGluValIleAlaIleTyrArgThrHisLeu 1371 ::::: :::::	### ##################################
* 26384 27253: contig of 870 bp in lustration of the contig of 870 bp in lustration of the contig of 866 bp in lustration of 8	9 9 9 9 9	gap of unknown length to 16803 17680: contig of 878 bp in le gap of unknown length to 17681 18548: contig of 868 bp in le to 18549 19413: contig of 865 bp in le gap of unknown length to 19414 20289: contig of 876 bp in le gap of unknown length to 19414 20289: contig of 876 bp in le gap of unknown length to 19414 20289: contig of 876 bp in le gap of unknown length to 19414 20290 21156: contig of 867 bp in le gap of unknown length	11579: contig of un 12459: contig of un 12459: contig of gap of un 13321: contig of gap of un 14190: contig of un 15058: contig of un 15923: conti	* 5291 6155: contig of 865 bp in length  * 6156 7151: contig of 96 bp in length  * 6156 7151: contig of 996 bp in length  * 7152 8036: contig of 885 bp in length  * 8037 8948: contig of 912 bp in length  * 8037 8948: contig of 912 bp in length  * 8049 9836: contig of 888 bp in length  * 8949 9836: contig of 888 bp in length  * 8949 9836: contig of 889 bp in length  * 8949 9836: contig of 869 bp in length  * 9837 10705: contig of 869 bp in length  * 9837 loops of unknown length  * 9837 loops of unknown length	of 887 b unknown of 893 b unknown of 865 b unknown of 866 b unknown of 876 b unknown of 876 b

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			735 lumetLysLysSerHisAspValIieValAspAspLeuAsnLysLysLeu 751 ::	735 75442 CTTAACAATTGAAATGAAAATCATTATGTTCCTTTAAAAGTAAGT	I TeuturysvalcysLeukspasnlysLeuLeuThrGlnGlnValAsnas				637 spValGluArgGluTyrGluArgSerLeuAsnGluThrargProLeuLys 653 :::::        :::   :::	620 tLysSerLeuLeuSerAsnGluLeuAsnGluLysAlaLysLysLeuIleA 637 	604 LeuSerAlaLysLeuAlaLeuSerIleProAlaGluLysPheGluAsnMe 620	587 rgGluLysArgGlyArgLysLeuThrGluMetGluGlyGlnLeuLysAsp 603          :::        :::	570 tGluGluAsnLysArgLeuGlnLysGluLeuSerMetCysGluLeuGluA 587 :::	554 GlnAsnGluMetLeuValGluGluPheLysArgAspGluGlyLysLeuMe 570 :::   ::: 74945 GAAAACAACCATAAATGCAAGGTATCAAAAAAAACCGAAAAGTGTA 74991	Align seg 1/1 to: AC022466 from: 1 to: 83775	alignment_block: US-09-750-590-2 x AC022466 .:	allgnment_scores:  Ouality: 1084.50  Ratio: 3.973  Percent Similarity: 88.636  Percent Identity: 72.078	65487: contig gap of contig gap of 67207: contig	Of

45538: 46405:

44675: 43801: 42933: 42067:

41201: 40334: 39452: 38583: 37687: 36814:

62886 86619 61141 60264 59405 58530 57670 56777 55911 55054 54190 53324 52461 51589 50730 49867 49000 48140 47270 46406 45539 44676 43802 42934 42068 41202 40335 39453 38584 37688 36815 35949 35082 34219 33348 32482

62885: 61997: 61140; 60263: 59404: 58529: 57669: 56776: 55910: 55053: 54189: 53323: 52460: 51588: 50729: 49866: 48999: 48139: 47269:

Assembly program: Phrap; version 0.990399  * NOTE: This record contains 96 individual  * sequencing reads that have not been assembled into  * sequencing reads that have not been assembled into  * contigs. Runs of N are used to separate the reads  * and the order in which they appear is completely  * arbitrary. Low-pass sequence sampling is useful for  * identifying clones that may be gene-rich and allows  * overlap relationships among clones to be deduced.  * However, it should not be assumed that this clone  * will be sequenced to completion. In the event that  * the record is updated, the accession number will  * be preserved.  887: contig of 887 bp in length  agap of unknown length	JOURNAL Unpublished JOURNAL Unpublished REFERENCE 2 (bases 1 to 83775) ROWEN, L., Madan, A., Qin, S., Abbasi, N., Baradarani, L., Birditt, B., Bloom, S., Dors, M., Dickhoff, R., Fleetwood, P., Harrison, G., James, R., Kaur, A., Madan, A., Owen, M.P., Ratcliffe, A., Shaffer, T. and Hodd, L. TITLE JOURNAL Submission Submitted (04-FEB-2000) Multimegabase Sequencing Center, University of Washington, PO BOX 357730, Seattle, WA 98195, USA	seq_name: gb_htg:AC022466  seq_documentation_block:	785 alPheIleProProGluArgHisGluLysGluMetMetAlaLeuLysSer 801 [     :::
27254 27254 28120 28988 29862 30738 31602	* 18549 * 19414 * 20290 * 21157 * 22032 * 22917 * 23787 * 24656 * 25520	* 10706 * 11580 * 12460 * 13322 * 14191 * 15059 * 15924 * 16803 * 17681	* 888  * 1781  * 2646  * 3526  * 4402  * 5291  * 6156  * 7152  * 8037  * 8949
gap of unknown lengt contly of 866 bp in gap of unknown lengt contig of 868 bp in gap of unknown lengt contig of 874 bp in gap of unknown lengt contig of 876 bp in gap of unknown lengt contig of 864 bp in gap of unknown lengt contig of 880 bp in gap of unknown lengt contig of 880 bp in gap of unknown lengt contig of 880 bp in	of 865 b unknown of 876 b unknown of 867 b unknown of 875 b unknown of 885 b unknown of 886 b unknown of 868 b unknown of 864 b unknown of 864 l unknown of 864 l unknown of 870 b	gap of unknown length contig of 874 bp in length 12459; contig of 880 bp in length 12459; contig of 880 bp in length gap of unknown length 13321; contig of 862 bp in length 14190; contig of 869 bp in length gap of unknown length 15058; contig of 869 bp in length gap of unknown length 15923; contig of 868 bp in length 15802; contig of 8678 bp in length 17680; contig of 878 bp in length gap of unknown length 17680; contig of 878 bp in length gap of unknown length	of 893 b unknown of 865 b unknown of 860 b unknown of 876 b unknown of 885 b unknown of 885 b unknown of 996 b unknown of 998 b unknown of 888 b unknown of 888 b unknown of 888 b unknown of 888 b

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842 Tyrvalprova	825 yrserleuMe ::::    30984 ACGCTCTCAC	808 sGlnLeuSert 	792 HisGluLysG 	775 euSerLysAs         :   31134 TAAGTAAGGA	758 rThrGluLys 	742 ValileValA :::   :::  31234 GCAATTATTG	727 snva 	710 pAsnLysLeu            31334 TAATAAGCTC	694 ThrSerLysA     31384 ACATTGAANA	677 erargLeuGl 	. 660 salalysleu  :::       31484 GGGCAAGCTT	644 ArgSerLeuA :::        31533 AAATCCCTTA	627 u.LeuAsnG1   :::      31583 AAGTGAATGA	611 SerilePro	Align seg 1/1 to	alignment_block: US-09-750-590-2 x	alignment_scores: Quality: Ratio: Percent Similarity:	****
oValLysThrHisGluGluIleLysThrAla.LeuSerSerT 858	yrSerLeuMetSerGluAsnAsnAspLeuLysLysThrMetSerHisGln 841 :::::            ::::               :::    ACGCTCTCACATCTGAAAACACTAACTTGAAGAAGATGATGAGTAATCAG 30935	SGlnLeuSerGluLeuAsnLysLysCysGlyGluAspGlnGluLysIleT 825 	HisGluLysGluMetMetAlaLeuLysSerAsnIleThrGluLeuLysLy 808 	euSerLysAsnValSerArgLeuGluThrValPheIleProProGluArg 791         :::	TThrGluLysLysLeuGluMetGluLysLeuLeuMetGluAsnAlaSerL 775 	VallleValAspAspLeuAsnLysLysLeuSerAspValThrHisLysTy 758 :::   :::	SnValProLeuLysValSerGluGluMetLysLysSerHisAsp 741 	PASnLysLeuLeuThrGlnGlnValAsnAsnLeuThrThrGluMetLysA 727 	ThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysValCysLeuas 710 	erArgLeuGluGlnLysSerGlyGluLeuGlyLysArgIleThrGluLeu 693 	sAlaLysLeuAlaGlnHisValLysProGluGluHisGluGlnLeuLysS 677 	ArgSerLeuAsnGluThrargProLeuLysArgGluLeuGluAsnLeuLy 660 :::	u.LeuAsnGluLysAlaLysLysLeuIleAspValGluArgGluTyrGlu 643 	SerIleProAlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGl 627 :::	to reverse of: AC022466 from: 1 to: 83775		:: lty: 984.50 Length: 634 tio: 2.407 Gaps: 25 ity: 64.511 Percent Identity: 44.637	64625 65487: contig of 863 bp in length gap of unknown length 65488 66346: contig of 859 bp in length gap of unknown length 66347 67207: contig of 861 bp in length

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GlnHisValProLeuGluGlnValGluSerLeuLysLysSerLeuSerGl 1109
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                      133
                                                         99 yHisAlaLeuCysLeuGlnLysLeuLeuGlnTyrAsnCysProThrGluH 116
                                                                                                                                                                                                                                       83 ThrSerAspThrAlaGlyArgAsnAlaLeuHisLeuAlaAlaLySTyrGl
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                                                                                                                                                                                                                     32 ACCAGTGACACTGCAGGGAGAAATGCTCTTCACCTGGCTGCTAAGTATGG
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CysProSerSerIleGlnLeuLeuCysAspHisGlyAlaSerValAsnAl 149
                                                                                                                                         ACATGCATTGTGCCTACAAAAACTTCTACAGTACAATTGTCCCACTGAGC
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
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                                                                                                                                                                                                                                                                                                                                                           Submitted (17-JUN-1999) to the DDBJ/EMBL/GenBank databases. Osamu Ohara, Kazusa DNA Research Institute, Laboratory of DNA Technology; Yana 1532-3, Kisarazu, Chiba 292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, Tel:+81-438-52-3913,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA Res. 6 (3), 197-205 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tanaka,A., Kotani,H., Nomura,N. and Ohara,O.
Prediction of the coding sequences of unidentified human genes.
XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins in vitro
                                                                                                                                                                                                                                                                                                                                                         Fax:+81-438-52-3914)
                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ohara,O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kikuno, R., Nagase, T., Ishikawa, K., Hirosawa, M., Miyajima, N.,
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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151. .5280
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D93 a 861 c 1177 g 1229 t
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BASE COUNT 2093 a 861 c 1177 g 1229 t ORIGIN

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alignment_block:
US-09-750-590-2 x AB028997
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                                                                                                                                                                                                                                        CTATTCTGCTAGAACATGGTGCTGATCCAAATCTTGCGGATGTCCATGGC
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                                                                                                                 nLeuLeuCysAspHisGlyAlaSerValAsnAlaLysAspValAspGlyA 155
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                                                                                                                                                         AACACTGCTCTTCACTATGCTGTCTATAATGAGGACATATCAGTAGCAAC
                                                                                                                                                                                                                                                                                                                                                          yArgAsnAlaLeuHisLeuAlaAlaLysTyrGlyHisAlaLeuCysLeuG
                                                                                                                                                                                                                                                                                lnLysLeuLeuGlnTyrAsnCysProThrGluHisValAspLeuGlnGly
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTTTGCTCAGGAAGAATGGCTTGAAC.....GATAGAGACAAGATGA 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e.....LeuAlaLysLysGlyValAsnProGlyLysLeuAspValGluG
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B9 CAGTCACCAACTANTTCAGAÑTATAANGAAGAAA 823 105 alleuilelys	88		٠.
05 alleuilelys	9	AGTCACCAACTAATTTCAGAATATAAAGAAGAAA	J.
24 GGATACCTAAACATTCTTCTCAAAATAGTAATTCAGTGGATGAAAGCTCT 873 16 Leunspaleleu	20	LeuIleLysAsnGlyAlaAspValThrLeu 21	- 0,
16 Leunspaheleu	24	ATACCTAAACATTCTTCTCAAAATAGTAATTCAGTGGATGAAAGCTCT 87	Ψ
25 FTYIALAARGILEGIYASPASNLEUASPILE	216 874	euAspAlaLeuGlyHisAspSerSerTy 2	ω o
24 GCCTACCTCAGATGACGAGACCTCAATTTCATACTAAGAATGTCCCAA 973 26LeuThrLeuLeuLysThrAlaSerGluAsnSerAsnLysGly 249 36SerGlnAsGCTAATGTCCTCAGCAATCTCAGAAATAT 1023 74 AACCAAGCTTAGCAAAGCTAATGACTGCTTCTCAGCAATCAGAAAAAT 1023 74 AACCAAGCTTAGCAAAGCTAATGACTGCTTCTCAGCAATCAGAAAAAT 1023 74 AACCAAGCTTAGCAAAGTATGGCACTGTGAGAAACAGTACTGAGAAAAAAT 1023 75 AFGLUHISGLASNILEGLASPLEUGLU11eGLUASNGLA 278 36SerGlnMetLeuAspGluValAsnThrLysSerAsnGlnA 278 37 GGATAGAAATCCGATAGTCAAGTGCATTCTGATCAATCAA	N	TyralmargIleGlyAspAsnLeuAspIle 2	Ui
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24 TTAGÁÁGCAACTATAGGCACTGTGAGAACAGGAAATAGAACTTTGTTTG	LT.	rgGluLeuTrpLysLysGlyProSerLeuGlnGlnArgAsnLeu 2     :::   :::	4
5	1024	AGAAGCAACATATGGCACTGTGAGAACAGGAAATAGAACTTTGTTTG	73
# GGATTAGAGATUCGATAGUCANGATAGAGATAGAGATTAGGAAAATTATGGATAGAAAAAAA	265	SerGlnMetLeuAspGluValAsnThrLysSerAsnGlnA 2	ນ 60
A SADLEULLYSGIUAFG	278	gGluHisGlnAsnIleGlnAspLeuGluIleGluAsnGlu 29	1
2 ABPLEULYSGIUATGLEUAT 298	N	AACATCAATCAAAGTCCAGTGCTTTTCTCATCCTACCTATCAATCA	73
# GACCITCITCCCAAAACCTTCCCACAAACCTTCCCACAAACCTTCCCACAAAACCTTCCCACAAAACCAAAACCAAAACCAAAACCAAAACCAAAACCAAAA	292	spLeuLysGluArgLeuAr 2	യ വ
GAAGGAAGAACCAACAACACAAAAGCCAAGGCATTGCAAAAAAAA	298	<pre>arvg1leGlnGlnGlnGlnArgIleLeuLeuAspLysValAsnGly 3</pre>	ω
ATATTATTGAAAGTGCTCCACTAGAGCAAACAAATAAGATGGCTTAAACTAG  ValAlaAspAspLeuGluSerGluLysGluLysLeuLysSerLeuLe 339 :::   ::::::::::::::::::::::::::::::	1224		73
74 ATATTATTGAAAGTGCTCCACTAGAGCAAACAAATÁATGACAAATTAGACT 132: 24 ValalaaspAspLeuGluSerGluLysGluLysGeuLysSerLeuLe 23 :::  ::::::::::::::::::::::::::::::::	314	LeuGlnLeuGlnLeuAsnGluGlnValMet 3	ω
24 ValalaAspAspLeuGluSerGluLysGluLysLeuLysSerLeuLe 339 ::::  ::::::::::::::::::::::::::::::	1274	ATATTATTGAAAGTGCTCCACTAGAGCAAACAAATAATGACAATTTGACT 1	23
24 TATGTTGATGAAGTGCACAAAAATAATAATAATAAGAAGTGATATGATGTCCCCATT 137.  39 UALAALALYSGIULYSGINHISGIUGIUSErLeuArgThrIleGIUAlal 356	324	ValAlaAspAspLeuGluSerGluLysGluLysLeuLysSerLeuLe 3	1 0
74 AGGATTAGGACAAGAATGTAGGATGAATGTCACTAGAATGTAGATTGTAGATTATAGAATGAAT	110	TAIUTIUAIUAAUTUOANATIONINIA TAURATUATORIA TA	5n -
56 euLysSerArgPheLysTyrPheGluSerAspHisLeuGlySerGlySer 372 ::::::::::::::::::::::::::::::::::::	<b>1</b>		N
24 TCTCTGAGAATTTTCCACAGAAGTATGTTGATCCTTTAGCTGGGCTGCA 147.  73 HisphearglysGluaspMetLeuLeuLysGlnGlyGlnMetTyrMetTh 389.  74 GACGGAAAAGAAAATATAAGGAAATGAAACAAGAAGATGTGTTTA 152.  75 RESPSETGLAGYSThrSer	Ġ	euLysSerArgPheLysTyrPheGluSerAspHisLeuGlySerGlySer 3	
73 HisphearglysGluAspMetLeuLeuLysGlnGlyGlnMetTyrMetTh 389 ::::::::::::::::::::::::::::::::::::	N	TCTCTGAGAATTTTCCACAGAAGTATGTTGATCCTTTAGCTGGGCTGCA 1	
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89 rAspSerGlnCysThrSer	7	GACGGAAAAAAAAATATAGGAAATGAACAAGCAGAAGATGTGTTTTA 1	Ñ
24 TATACCTTCTTGCATGAGTGGATCAAGAAACTTTAAGATGGCTAAACTAG 157 96	00	rAspSerGlnCysThrSer	
96	1524	TATACCTTCTTCCATGAGTGGATCAAGAAACTTTAAGATGGCTAAACTAG 1	7
	9	AGGATACAAATCAAGGAATGCAACACCACATGAGAGTCTCCTGAG	06 623

663	646 2447	629 2397	616 23 <b>47</b>	600 2297	585 2247	583 2197	569 2147	556 2097	546 2047	529 1997	512 1947	497 1897	482 1847	467 1797	451 1774	434 1724	417 1674	407 1624
LeuAlaGlnHisValLysProGluGl	euAsnGluThrargProLeuLysArgGluLeuGluAsnLeuLysAlaLys   :::     ::: :::    :::     :::     ::::   TATCTGAAACAAAAGAAATAAAATCACAGTTAGAGCATCAAAAAGTTGAA	nGluLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerL:	LysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAs :::         :::::           :::	GlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIleProAlaGlu ( :::	uGluArgGluLysArgGlyArgLysLeuThrGluMetGluGly. !	GTTGATGACTTAACTCAGTCATCTGAAACAGCCTCAGAGGATTGTGAGCT	LeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMet 5	uMetLeuValGluGluPheLysArgAspGluGlyLys	GlyLysLeuArgAsnGlnIleLysGlnAsnGl 5	spGlnLeuLysAspMetLysValLysTyrGluGlyAlaSerAlaGluVal 5 ::           :::	UThrSerAspAlaAlaThrGlyAsnHisArgLeuMetGluGluLeuLysA 5	LysValLysGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLe 5	1 :	uargValLysGluAspSerAspGluGlnIleLysGlnLeuGluA 4	euAlaLeuGluCysGl 4 ;;;       GTTGAAGAAGA 1	etArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuGlnAsn 4 ::::::::::::::::::::::::::::::::::::	nglnalaSerTyrSerGluAsngluIleLeuLysLysGluLeuGluAlaM 4  :::   ::: 	MetLeuArgProLeuGluLeuAlaLeuProAs 4
671	662 2496	646 2446	629 2396	615 2346	599 2296	585 2246	582 2196	568 2146	556 2096	2046	996	512 1946	496 1896	482 1846	67 .796	50	434 1723	417 1673

945	SerAlaGluIleLeuAlaLysTyrLysLysSerGlnGluGluIleValTh 9	929
928 8288	: luGluLysMetSerGlyLeuArgLysSerMetLysLysValGlnAspAsn 9 	912 3239
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869 3088	SThrAlaLeuSerSerThrLeuAspLysThrAsnArgGluLeuValAspV:::   :::::   ::::::   ::::::   :::::::	852 3043
852 3042	LySThrMetSerHisGlnTyrValProValLySThrHisGluGluIleLy	<u>μ</u> ω
835 3018	luAspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAspLeuLys        	819 2978
819 2977	nlleThrGluLeuLysLysGlnLeuSerGluLeuAsnLysLysCysGlyG:    :::    :::    :::	802 2928
802 2927	PhelleProProGluArgHisGluLysGluMetMetAlaLeuLysSerAs :::	786 2896
785 2895	snAlaSerLeuSerLysAsnValSerArgLeuGluThrVal    ::: 	772 2846
772 2845	STYTThrGluLysLysLeuGluMetGluLysLeuLeuMetGluA ,, :::   ::::         TTCCAAACAAAAGGAGTTGAAATGGCTCAAAAGAAATGAATTCTGAGA	757 2796
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743 2760	7 snValProLeuLysValSerGluGluMetLysLysSerHisa: ::::: ::::::   :::   :::  6 ACGCTCAGAGGGCAACTTTCTCGAGAACAGAATGCC	727 2726
727 2725	pAsnLy	- io ⊢
710 2688	4 ThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysValCysLeuAs :::       :::    ::::   7 GAACTGAGTCTCCAAACACTGGAGATGGAATTGAGGACTGTA	694 2647
693 2646	0 luGlnLysSerGlyGluLeuGlyLysArgIleThrGluLeu 	68 2597
680 2596	71 u	671 2547
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1177	1161 ysGluValGlyIleIleLysAlaSerLeuArgGluLysGluGluGluSer ::: :::::::::   :::                :::   ::: 4091 TTCAGAAAAACCTGTTAAATGCAAATTTGTCTGAAGATGAAAAGGAACAA	
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1144 4040	. 1128 GluGlnGlnThrValThrGlnLeuArgGlnMetLeuGluAsnGlnLysAs     :::           :::       4006 ATGCAAGATCACAAGCAAAAGCTTGAAAAAGATAA	
1127 4005	956 T	
1115 3955	1099 .GlnValGluSerLeuLysLysSerLeuSerGlyThrIleGluThrLeuL:::::::::::::::::::::::::::::::::::	
1098 3908	1090 LeuglnysglnHisValProLeuglu ::: ::::::::::::::::::::::::::::::	
1089 3858	1073 alGluGluAsnAlaLysGlnThrSerGluIleLeuAlaAlaGlnThrLeu 	
1073 3808	056 759	
1056	1048ThrGluGluLeuAsnArgGlnLeuLy	
1047	659 1	
3658	609	
3608	015 559	
3558	005 509	
3 1005 3 3508	988 uLysGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGluG :::        :::::::::::::::::::::::::::	
e 988 : T 3470	IleSerLeuGluGluCysGluArgLysPheLysAlaTbrGluI:::::::       :::	
e 971 T 3420	962GluCysIleLysLeuLysTyrAlaProIle	
. 961 A 3379	945 rLeuHisGluGluILeAlaAlaGlnLysArgGluLeuAspThrIleGln.	
Т 3329		

	6 laLeuLeuGlnIle 1390     :::    4 AACTCTCCAAAATA 4767	1386 4754
1386 4753	USERALBALAGINGIYHISMETASPGluASPValGlnAlaA :::::::::::::::::::::::::::::::::::	1372 4704
1372 4703	AlaAspArgGlnHisGlnGluValIleAlaIleTyrArgThrHisLeuLe	1356 4669
1355 4668	leAspSerLeuGlnGlnGlnValArgSerLeuGlnGlnGlnLeuAlaAsp:::::::   ::::::    ::::::	1339 4619
1339 4618	rGlnLeuThrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuI 	1322 4575
1322 4574	GluLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSe:::    ::: :::          ::: ::::	1306 4525
1305 4524	rgIleGlnGluSerAlaLysGlnIleGluAlaLysAspAsnLysIleThr::::   ::::::::::::::::::::::::::::::	1289 4486
1289 4485	nGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGlnArgA    :::::    ACAAAAGAAATGTGAAAAA	1272 4467
1272 4466	AspGluLysGluLeuLeuHisPheSerIleGluGlnGluIleLysAspGl ::::::           ::::::            CAAGAGGAGTTGTTA	1256 4438
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Database sequences: 930621
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Search time (sec): 150.4300
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Results were produced by the GenCore Copyright (c) 1993-2000 Compugen Ltd.
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9e-27

17e-26

5e-26

17e-26

5e-25

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5.1e-29
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.2e-172
.7e-171
.8e-126
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        alignment_block:
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                                                                                                     alignment_scores:
Quality:
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                                                             Ratio:
Percent Similarity:
                                                                                                                                                                                                                                         The nucleotide sequence (NS) of the full-length protein-coding sequence of clones c125.4 (AAV83133), da228_6 (AAV83133), du410_5 (AAV83134), eh80_1 (AAV83135), er369_1 (AAV83136), fh123_5 (AAV83137), fm60_1 (AAV83138) or fr473_2 (AAV83139), (all clones are deposited as ATCC 98415) and the proteins they encode are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals for example, tumour suppression/invasion activity, immune system boosting activity. The polynucleotides are also believed to be useful for gene therapy. This polynucleotide was isolated from a human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 15; Page 64-66; 104pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New polynucleotides encoding secreted human proteins - are derived from human foetal brain, adult brain, adult blood or placenta cDNA libraries, useful, e.g. as potential immunomodulators
                                                                                                                                                                                                                                foetal brain cDNA library.
                                                                                                         3117.00
                                                               4.453
96.286
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Treacy M;
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Length:

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                                                                                                                                                                                                                                        interferons, colony stimulating factor; CSF; interleukin; tumour invasion; tumour suppression; immune boosting; ds.
                                                                                                                                                                                                                                                             Clone; secreted protein; protein factors; cytokine; lymphokine; interferons, colony stimulating factor; CSF; interleukin; cloni
                                                                                                                                                                                                                                                                                                       Polynucleotide clone du410_5 encoding a secreted
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98US-0065125
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                                                                                                                                                                                                                                                             cloning;
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                                                                                                                                                                                                                                               OGluArgHisGluLysGluMetMetAlaLeuLysSerAsnIleThrGluL
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|TGAGAAACATGAAAAAGAGATAATAGCTCTGAAATCCAATATTGTTGAAC
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XX AAH75522;
XX AAH75522;
XX AC AAH75522;
XX Por 18-OCT-2001 (first e composity heavy chorus)
XX Human myosin heavy chorus
XX Human; myosin heavy chorus
XX Human immunodeficienc
XX Homo sapiens.
XX Homo sapiens.
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                           Polypeptide-human myosin heavy chain said polypeptide -
                                                                                                                                                                                                                                     (SHAN-) SHANGHAI BORONG GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; myosin heavy chain 74; disease; cancer; human immunodeficiency virus; ss.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to human myosin heavy chain 74 useful for treating diseases, e.g. cancer, human immunodeficiency virus (HIV) infection. The present sequence is that of the human myosin heavy chain 74 encoding
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             GlnValLysAlaGluTyrIleSerLeuArgGluHisGluGluLysMetSe
CAAATAAAAGCTGAGTACATCAGCCTGGCAGAGCACGAGGCAAAGATGAG
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milarity: 96.286
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| GTTGAGGCTCTGAAAAAATCTCTTAATGGCACAATTGAAAATCTAAAGGA
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| GCAGAGCATTTGCAGATTAAAGAAGCATTTGAGAAAGAAGTTGGAATCAT
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                     eLysAlaSerLeuArgGluLysGluGluGluSerGlnAsnLysThrGluG
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                                                                                                                                                                                                    84
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96 TTGGAACAAATATGATGACCGATTGATGAAAGCCGCGGAGAGGGGAAGATG
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CTAGATGTGGAAGGCAGATCTGCCTTCCATGTTGTGGCCTCAAAGGGGAA
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Ratio: 4.715
milarity: 93.908
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Gaps: 2
Percent Identity: 85.736
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Scanlan MJ,
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J, Stockert
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seq_documentation_block:
ID AAH13782 standard; cI
XX
AC AAH13782;
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DT 26-JUN-2001 (first e
XX
DE Human cDNA sequence S
XX
KW Human; primer; detect
XX
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                                                                                                                                                                                                        TCAAGCCAGAGGAGCAT
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primer; detection; diagnosis; antisense

therapy;

gene therapy;

alignment\_block: US-09-750-590-2 x AAH13782

Align seg 1/1 to: AAH13782

from:

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50

647

664 laGlnHisValLysProGluGluHisGluGlnLeuLysSerArgLeuGlu nGluThrArgProLeuLysArgGluLeuGluAsnLeuLysAlaLysLeuA 664

680 100 Percent Similarity:

alignment\_scores

Quality: Ratio:

: 2229.00 : 4.320 : 95.203

Percent

Gaps: : Identity:

81.734

Sequence 1628

вP;

707 A;

236

ü 348

G; 337

T; 0 other;

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CC full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dr primer and an oligonucleotide complementary strand of a polynucleotide which complementary controlled complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the coligonucleotide comprises at least 15 nucleotides; or (b) a combination of a polynucleotide of a polynucleotide of a polynucleotide which comprises at sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end complementary to a complementary to the complementary to the complementary to a complementary to the complementary to a complementary to the complementary to a complementary
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27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 8; SEQ ID 10713; 2537pp +
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Sugiyama T, Wakamatsu A,
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99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
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Ctsuki
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                                                                                                                                          luCysIleLysLeuLysTyrAlaProIleIleSerLeuGluGluCysGlu 978
                           rLeuHisGluGluIleAlaAlaGlnLysArgGluLeuAspThrIleGlnG
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|ACTGCATGCCGAAATTAAAGCCCAGAAGAAGGAGCTCGACACAATACAAG
                                                                luGluLysMetSerGlyLeuArgLysSerMetLysLysValGlnAspAsn
                                                                                                                                                                                         GluPheValLys1leLysAspGluAsnGluIleLeuLysArgAsnLeuGl
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|||||||||||||||:::||||||||||||
|CTAACAGAGAATTATTAGATGTGAAGAAAAATTTGAAGATATAAATCAG
                                                                                                                                                                                 AGGCAAAGATGAGCTCGCTAAGTCAGAGCATGAGAAAGGTGCAGGATAGT
                                                                                                                                                                                                                                                                                                                                     lLysThrHisGluGluIleLysThrAlaLeuSerSerThrLeuAspLysT
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                                                                                                                                                                                                                                                                                                           SerGluAsnAspLeuLysLysThrMetSerHisGlnTyrValProVa
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|CCTTTAAAAGTAAGTGAAGACATGAAAAAGTCACATGATGCAATTATTGA
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seq_documentation_block:
ID AAH03594 standard; cDNA; 84
XX
AC AAH03594;
XX
DT 26-JUN-2001 (first entry)
XX
DE Human cDNA clone (5'-prime)
XX
KW Human; primer; detection; (
XX
FON Sapiens.
XX
PD 07-FEB-2001.
                                                                                                                                                                                                                  seq_name: /SIDS2/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH03594
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||||||||||:::|||:::
|ACACGGAAGTAAAGAATGTGAAAGAAGCTAGTAGAAGAAAATGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGAAAAACAGACGAGCTAAACAAACAGTTAAAAGACTTGTCACAGAAAT
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                                                                                                                                                  (first entry)
                                                                                                           detection; diagnosis; antisense
   99JP-0248036
99JP-0300253
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SS

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The present invention describes primer sets for synthesising 5602 cc full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of cc the 5602 nucleotide sequences defined in the specification, where the cc oligonucleotide comprises at least 15 nucleotides; or (b) a combination cc of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end cc complementary to a combination cc oligonucleotide which comprises a 3'-end sequence complementary to a cc oligonucleotide which comprises a 3'-end sequence complementary to a cc oligonucleotide which comprises a 1 last 15 nucleotides and the combination of cc the 5'-end sequence/3'-end sequence; where the combination of cc the 5'-end sequence/3'-end sequence is selected from those defined in cc the specification. The primers are useful for synthesising polynucleotides, and the specification and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers are also useful for the cc challsoff company without any specialised methods. AAH03166 to AAH13628 and cc AAH13633 to AAH13672 represent human amino acid sequences; AAB92446 to AAH13632 cof the present lovention.
                                                                                                                                                                                                                                                                                                                            #11gnment_block:
US-09-750-590-2 x AAH03594
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02-MAY-2000;
09-JUN-2000;
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                                                       nGluThrArgProLeuLysArgGluLeuGluAsnLeuLysAlaLysLeuA
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            nGlnThrLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuL
TCAGACACTACAAAAGGAAATTGAAAAAGTTTATTTGGATAATAAGCTCC
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, Sugiyama T, Wakama
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; 2000JP-0183767.
; 2000JP-0241899.
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ı A, Nagai K
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antiulcer; osteopathic; neuroprotective; nootropic; antipsoriatic; cerebroprotective; anticonvulsant; antidepressant; gene therapy; vaccine; autoimmune disorder; multiple sclerosis; allergic condition; insulin dependent diabetes; asthma; myeloid cell deficiency; ulcer; lymphoid cell deficiency; burn; osteoporosis; osteoarthritis; central nervous system disorder; Alzheimer's disease; stroke; parkinson's disease; Huntington's disease; coagulation disorder; haemophilia; thrombosis; inflammatory disorder; Crohn's disease;
                                                                                                                              Human; mouse; chicken; rat; secreted expressed sequence tag; sEST; expressed sequence tag; EST; probe; chemotactic; proliferative; immunomodulatory; haematopoietic; chemokinetic; analyesic; haemostatic; thrombolytic; antiinflammatory; cytostatic; antibacterial; antifungal; entiviral; antidabetic; antiasthmatic; vulnerary; antiparkinsonian; entiviral; antidabetic; antiasthmatic; vulnerary; antiparkinsonian;
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alignment_block:
US-09-750-590-2 x AAA45014
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                                                                                                                                                                                                                                                                                                                                                                                 CC AAA43426 to AAA45925 represent specifically claimed secreted expressed CC sequence tags (sESTs), isolated from human, mouse, chicken and rat CC tissue sources. The sESTs can have a range of activities depending on CC the tissues they were isolated from. The activities include: CC chemotactic; proliferative; immunomodulatory; haematopoietic; chemotactic; antibacterial; antifungal; antivital; antidiabetic; chemotactic; antiparkinsonian; antiporiatic; cerebopotective; cC cytostatic; antiparkinsonian; antipsoriatic; cereboprotective; cc antionvulsant; and antidepressant. The sESTs can be used for gene CC therapy and in vaccines. The sESTs are useful as probes for the CC dentification and isolation of full-length cDNAs and genomic DNA CC are useful in assays for determining biological activity and raising CC antibodies. They may be useful for treatment of autoimmune disorders (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, CC (asthma), myeloid or lymphoid cell deficiencies, wounds, burns, ulcers, CC (Alzheimer's, Parkinson's, Huntington's disease, stroke), coagulation con disorders (haemophilia, thrombosis), inflammatory disorders (CC offices), bacterial, fungal or viral infections, depression and CC psoriasis. AAA45926 to AAA45931 represent linker variants which are given to the exemplification of the present invention.
                                                                                                                                                                      Align seg 1/1 to: AAA45014
                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                               1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 616; 803pp; English.
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Merberg D, Treacy M,
                                                                                                                                                                                                                                                                                                                                                          Sequence 571 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                such as autoimmune, infectious, and central nervous system disorders
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                              leLysAlaSerLeuArgGluLysGluGluGluSerGlnAsnLysThrGlu 1182
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Bowman MR;
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DT 12-OCT-2001 (first e
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DT 12-OCT-2001 (first e
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Colon tumour related
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Human; immunotherapy;
XW immunogenic; gene the
XX
Homo sapiens.
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HOMO Sapiens.
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29-DEC-2000; 2000WS-U
PF 29-DEC-2000; 2000WS-U
PF 29-DEC-2000; 2000WS-U
PF 29-JUN-2000; 2000WS-U
PR 10-MAN-2000; 2000WS-U
PR 19-MAN-2000; 2000WS-U
PR 29-JUN-2000; 2000WS-U
PR 20-JUN-2000; 
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immunogenic; gene therapy; vaccine; colonic cancer; ss.
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2000US-0480321.
2000US-0504629.
2000US-0519444.
2000US-0575251.
2000US-0609448.
2000US-0649811.
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Jiang Y;
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                                                                                                                                                                                                            Benson DR,
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Colon tumor associated proteins and nucleic acids useful for the prevention, diagnosis and treatment of colonic cancer -

Claim 25;

Page

308; 472pp; English

the

present invention describes colon tumour associated proteins (I) and polynucleotides (II) that encode them. (I) have cytostatic activity.

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alignment_block:
US-09-750-590-2 x AAI29101
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LeuAspAla
                                                                                        GGCCAACAATGTGTCAACTGCTGATAGATAGAGGAGGGGGATGTTAATTCC
                                                                                                                                                                                                                                                                                                                                    rgProThrIleCysGlnLeuLeuIleAspArgGlyAlaAspIleAsnSer
                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAAGATGTAGACGGGGGGACACCACTTGTTCTGGCTACTCAGATGAGTA
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Gaps: 1
Percent Identity: 94.161
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The present invention describes differentially expressed genes involved CC in angiogenesis (I), and the polypeptides that encode them. (I) have CC cardiovascular activity, and can be used in the modulation of angiogenesis. The nucleic acids and polypeptides may be used in the CC cardiovascular activity, and treatment of diseases associated with CC inappropriate angiogenesis. The polypeptides may also be used as antigens CC in the production of antibodies against them and in assays to identify CC modulators of their expression and activity. The antibodies and activity and activity and modulate angiogenesis. The antibodies may also be used as diagnostic capents for detecting the presence of the polypeptides in samples. CC Disorders that may be prevented, diagnosed and/or treated by the above CC methods include, for example vascular tumours, proliferative tumours, cc atherosclerosis, ovarian hyperstimulation, psoriasis, endometriosis cassociated with neovascularisation, restenosis subsequent to balloon angioplasty, scar tissue over production. peripheral vascular disease, hypertension, inflammatory vasculitides, Reynaud's disease and CC lymphangitis, lymphedema, wound healing and tissue repair, ischaemia CC lymphangitis, lymphedema, wound healing and tissue repair, ischaemia CC conditions, heart failure such as congestive heart failure, age-related conditions, heart failure such as congestive heart failure, age-related conditions and consension of the sevenal in the exemplification of the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Differentially expressed genes involved in angiogenesis, useful for treating e.g. vascular tumors, atherosclerosis and/or restenosis subsequent to balloon angioplasty -
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(GETH ) GENENTECH INC
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Sequence 1434 BP; 430

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exemplification

macular degeneration and osteoporosis. to AAB98325 represent sequence used in

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alignment_scores:
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244 GluAsnSerAsnLysGlyArgGluLeuTrpLysLysGlyProSerLeuGl
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CTAACGCTGTGGAAGCCTTAATTAAAAAGGGTGCAGACCTAAACCCTTGTA
                                AGACCCCAACAAAACCAAAGCAGCATGACCAAGTCTCTAAAATAAGCTCA
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                                                                                                                                                                               AspAlaLeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAspAsnLe
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Gaps: 6
Percent Identity: 38.071
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seq_documentation_block:
ID AAI59207 standard; cE
XX AAI59207;
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XX Human polynucleotide
XX Human; nootropic; imm
KW peripheral nervous sy
KW Alzhelmer's; Parkinso
KW Human; nootropic; imm
KW peripheral; ss.
XX chemokinetic; thrombo
KW leukaemia; ss.
XX Chemokinetic; thrombo
KW 1eukaemia; ss.
XX V 26-JUL-2001.
XX 26-JUL-2001.
XX 26-JUL-2000; 2000US-0
PR 21-JAN-2000; 2000US-0
PR 25-APR-2000; 2000US-0
PR 19-JUL-2000; 2000US-0
PR 19-JUL-2000; 2000US-0
PR 19-OCT-2000; 2000US-0
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25-APR-2000; 2000US-0552317
09-JUL-2000; 2000US-0598042
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                                                                                                                   2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0662191.
2000US-0662191.
2000US-0693036.
2000US-0727344.
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Asundi V,

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: AAI59207
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P-PSDB; AAM40051.
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Zhao QA, Zhou P,
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                  nCysProThrGluHisValAspLeuGlnGlyArgThrAlaLeuHisAspA 128
                                                                                                        AlaAlaLysTyrGlyHisAlaLeuCysLeuGlnLysLeuLeuGlnTyrAs 111
                                                                                                                                                                                               lyValAspIleThrThrSerAspThrAlaGlyArgAsnAlaLeuHisLeu
                                                                                                                                                                                                                                                          GGCGGCCATGCGGGGTGCGGCCAGCTGTCTGGAGGTGATGATAGCTCATG
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CTGCGTGGTGGACGTGGACAGCAGCGGGTGGACTGCCCTACACCATG
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428	? GluLeuAlaLeuProAsnGlnAlaSerTyrSerGluAsnGluIleLeuLy	412
1354	ATACTAGCTATGACGTAACCACCCTGC	1320
411	erThrGlyMetProValHisMetGlnSerArgSerMetLeuAr	395
1319		1316
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1315	GCTGGAGAACGAGCGG	1298
378	heGluSerAspHi	362
1297	GAGAGGAGGCTGGGACGGGAGGTTGGAGAGTTTGCAGAGCCGGCTGTCC	1248
361	nHisGluGluSerLeuArgThrIleGluAlaLeuLysSerArgPheLy	345
N.	GACAGGTGCAAGAGCTACAGCAGTTGCTGGTGGAGAGACAAGAG	1198
4	hisearChitysChitystenifesserienifessAlatysChity	
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328	geAggAGAGALalavtonoonananananananananananananananananan	<u>ت</u> د
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315	ATTCCCATGCCGGATGATCGAGATGCCTATGAGGAGATCGTGAGGCTG	1048
	pLeuGluIleGluAsnGluAspLeuLysGluArgLeuAr	284
	AGGGGCCCCCAAGAAGCGGAAGGCGCCTCCACCTCCCGCCA	998
ς α	euAspGluValAsnThrLysSerAsnGlnArgGluH1sGlnAsn11eG	268
v	TGATTCAGGCGAGGCGTCATCTCAGAACTCTATGTCCAGCCA	948
267	ysLysGlyProSerLeuGlnGlnArgAsnLeuSerGlnM :: ::::    ::: :::    :::::::	253
4	CACCTTCTGCAAGAGGCGGCCCAGCGCCCCT	898
253	laSerGluAsnSerAsnLysGlyArgGlu    ::::::::	236
897	AGGACGCGCTCACTATGGCGCCCTGGCGGGGGACAAACTCATC	851
236	.SAspSerSerTyrTyrAlaArgIleGlyAspAsnLeuAs	221
850	INVALLEULIEUYSASIIOLYSALANSPYALIII LEGUEGASPHAGEGOLY 	801
<u>ت</u> د	GGACGGCCCTGATGCTGGCCTGTGAGGGGGGCCAGCCCCGAAACAGT	751
204	yrGlyCysLy	00
750	GTCTCCTACTGCAGCAAGGGGCTGCCGCGAACGATCAGGACCTGCAA	701
187	LeuLeuIleAspArgGlyAlaAspIleAsnSerArgAspLysGln	171
700	GCGCAACACCCCTCATTATAGCAGCTCAGATGTGTCACACAGACCTGTGC	651
170	yArgThrProLeuValLeuAlaThrGlnMetCysArgProThrIleCy	154
650		0
154	lnLeuLeuCysAspHisGlyAlaSerValAsnAlaLysAspValAspG	w
137	laAlaMetAlaAspCysProSerSer	128 554

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seq_documentation_block:
ID AAI58253 standard; cDNA; 8503 BP.
XX
AC AAI58253;
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DT 22-OCT-2001 (first entry)
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DT 22-OCT-2001 (first entry)
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Human polynucleotide SEQ ID NO 456.
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Human polynucleotide Seq ID NO 456.
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Human incotropic; immunosuppressant kw peripheral nervous system; neuropat kw amyotrophic lateral sclerosis; Shy-ichemokinetic; thrombolytic; drug sc chemokinetic; thrombolytic; drug sc chemokinetic; thrombolytic; drug sc xx
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCAG 1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sAspGln 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .....GACCATTTCGCAGGCACACGCTTGAGCCTTGAGGCCCTGAG 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuThrSerAspAlaAlaThrGlyAsnHisArgLeuMetGluGluLeuLy 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCAGAGGTCATTCCTCTTGCCCTTATGAATCTCTCTCGGGCCGAGTTT 1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCTGGAGAACTTTGAGAAGGACGAGACACAGATGGAAGTGGAAGCTT 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LeuAlaLeuGluCysGluArgValLysGluAspSerAspGluGlnIleLy 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .....GTGCTCACCAGACAGAACCAGGAACTGATGGAGAAGGTCCA 1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rgLeuLysLeuGlnAsnGluLeuAlaHisLysValAlaGluCysLysAla 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGGTGAGCTGCCT
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                                                                     Chen R, Ma Y,
, Xu C, Xue AJ,
R, Drmanac RT;
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Yang Y,
                                                                                                       Zhang J;
                                                                                                                                              Ren F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               445
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                                                                                                                                      Wang
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alignment\_scores:

Quality:

Length:

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The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity semostatic asi immune system suppression, activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
      Sequence 8503 BP;
                                                   C.N.S disorders.
                                                 specification.
                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 456; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAM39097.
      3534 A;
      1287
    Ç
  1701 G;
  1981
T; 0 other;
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alignment\_block: US-09-750-590-2 x AAI58253 Align seg 1/1 to: AAI58253 Ratio: Percent Similarity: 2805 2755 3002 AGTCTCTG...AAACAACATCAAGAA..... 2720 2670 340 laAlaLysGluLysGlnHisGluGluSerLeuArgThrIleGluAlaLeu 356 271 232 AsnLeuAspIleLeuThrLeuLeuLysThrAla..... 243 CAAGAAAGCTTGCAAATTGAGAGGGACCAACTCAAAAGTGATATTCACGA 295 AsnGluGluValMetVal...AlaAspAspLeuGluSerGlu.... AAGAAGTAAAAACTTTAACTCAAGAAAAAGATGATCTAAAA...CAACTC TGTAGAAAGGGAGAAACACTGATTACTGAGAAACTGCAGCAAACTTTAG pLeuGluIleGluAsnGluAspLeuLysGluArgLeuArgLysIleGlnG ValAsnThrLysSerAsnGlnArgGluHisGlnAsn.....IleGlnAs TTTGGGTGCTTTGAAGACCGAGCTTTCTTACAAGACCCCAAGAACTTCAGG ATGGAACAGCTGAAGGAACAATTAGAAAATAGAGATTCTCCGCTGCAAAC AGAAAACACGTGAGGTTCAAGAAAGA....... ysLysGlyProSerLeuGlnGlnArgAsnLeuSerGlnMetLeuAspGlu .....SerGluAsnSerAsnLysGlyArgGluLeuTrpL 254 ATCAGGAAATAGTTAATCTCTCTAAAGAAGCCCAAAAATTTGATTCGAG 629.50 0.851 51.748 .....LysGluLysLeuLysSerLeuLeuA 340 from: 1 Percent Identity: 21.888 to: 8503 .CTAAATGAG 331 2901 2854 302 2804 285 2754 270 2719 2669

630	514 AlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGl	51
00	76 CAGGCCTACAAACCAAAGAAGAACTAAAAATTGCTCATATTCA	37
613	00GlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerTleF	6
599 3775	B3 sGluLeuGluArgGluLysArgGlyArgLysLeuThrGluMetGluGly.	5E 373
583 3725	67 GlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerM 	367
σ.	47 AGAAACTTAATGAAAATTATGAGGAAGTGAAA	364
566	50 snGlnIleLysGlnAsnGluMetLeuValGluGluPheLysArgAspG	UT L
550 3646	33 pMetLysValLysTyr : ::::: 97 CAAAGAATTGACATTG	350
533 3596	7 AlaThrGlyAsnHisArg	517 3568
3567	AA	3566
516	tGlnThrHisPheLeuAlaLeuLysGluHisLeuT	50
500 3565	3 aLeuLysAspValGlnLysArgMet     :::      ::::::    6 ACTTCTTAATGTACAAGAAGAAGATGT	48 351
483 3515	72AspSerAspGluGlnIleLysGlnLeuGluAspAl i:::::::   :::::::::::::::::::::::::::	47 346
471 3465	6 ala	45 341
456 3415	9 pSerAlaLysGlnAspArgLeuLysLeuGlnAsnGlv 	336
439 336 <b>5</b>	GlualametargThrPheCysAs	432 3316
431 3315	7 snGlnAlaSerTyrSerGluAsnGluIleLeuLysLysGluLeu :::::: :::::::::::::::::::::::::	417 326
417 3265	4 rArgSerMetLeuArgProLeuGluLeuAlaLeuProA     :::::::              6 AAGGAAGATATTTTCTTTAATACAGGAGAAAAATGAACTCCAACAAATGT	L C
404 3215	8 MGtThrAspSerGlnCysThrSerThrGlyMetProValHisMetGlnSe :::    :::    :: 8 ACTGCAGATGTTAAGGATAATGAGATAATTGAGCAACA	388 3176
387 3177	5ArgLysGluAspMetLe :::   :::  ::: 8 TTGGCATAGATAAAAAACAGGATTTGGZ	375 3128
174	SPhe	373 3078
3077	LysSerArgPheLysTyrPheGluSerAspHlsLeuGLySerGlySerHi       :::::: :::      AAATCGAAAATTTCTGAGGAAGTTTCCAGGAATTTGCA	357 3040

LLYSALBLYSLEU 663
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4657	AACAAGATCCAAGAGATTTATGAGAAAGAGGAACAACTTAATATAAAACA	4706
885 4707	pGluAsnGluIleLeuLysArgAsnLeuGluAsnThrGlnAsnG::::   ::::::::::::::::::::::::::::::	900 4756
900 4757	<pre>invaiLysalaGluTyrIleSerLe ::</pre>	916 916
917	GlyLeu	816
4807	GAGTTGACCAACAGACTTCAAGAAAGTCAAGAAGAAATACAAATTAT	1856
919 4857	TAAGGAAAAAGAGGAAATGAAAAGAGTACAGGAGGCCCTTCAGATAGAGA 4	926
927 4907	AspAsnSeralaGluIleLeualaLy	1956 1956
939 4957	SerGlnGlu9               CTCAAGAAAAAGATATCACTTTCTTTAAGATCACTAGTTCTCTAATCACTAGTTCTTCAAAAAAAA	941
942 5007	.ulleValThrLeuHisGluGluIleAlaAlaG 9	05
953 5057	eLysLeuLysTyr 9  :::    AAGGTTGACTCAG 5	106
969 5107	ATCTGTAACAAAAGAAAGAGA 5	176
977 5157	CysGluArgLysPheLysAlaThrGluLysGluLeuL 9     :: :::   :: ::: 	206
989 5207	ysGluGlnLeuSerGlnGln9      :::    ::: AGGAAAACCTTAGAGAAACTATAACTAGAGACCTAGAAAAACAAGAGGAG 5	95 256
995	9	95
57	TAAAAATTGTTCACATGCATCTGAAGGAGCACCAAGAAACTATTGATAA 5	306
996 5307	ThrGlnLysTyrAsnThrSerGluGluGluAlaL 1 :::::	356
1007 5357	GluIleLeuThrLeu 1 :::     ::: CAGGATCTGAAAATA 5	023 406
1024 5407	GluTh 1       GAAAC 5	040 456
1040 5457	SerArgLysThrGluGluLeuAsnA 1     :::      :::::   ::::  CTGAGAAGACAGATAAACTATCAA 5	053 506
1053 5507	rgGlnLeuLysAsp	556
1063	ThrGluAlaLysGluLysGluLysGluLysLeu	073

CleThrGluLeuLeuAsnAspValGlu	leGluAlaLysAspAsnLysIleThrG	N) (
IleGlnGluSerAlaLysGln 1 :::    macrocomcomcomcomcomcomcomcomcomcomcomcomcom	ThrThrIleThrGluLeuGlnArgAr	1280
LysAspGlnGlnArgCysAspLysSerL 1280 ::::: :::   :::   ::::  GAAAGCCTGAGAGAAAAGTGCTCTAGA 6381	eSerIleGluGlnGluIleLysAspGlnGlr ::: :::::::::::::::::::::::::::::::::	1263 6336
GluLysGluLeuLeuHisPh 1263        :::        AAGTAAAACCTGAAAAAAGGTTACTAAGTGA 6335	ົດ .	1255 6286
LysGluLeuSerAla 1254 	TCAAAATGGAAAGGGACCAATTCATAGCAAC	1250 6236
AGAGATGAGCTAAGGAGGATAAAAGAATCTC 6235	1LeuHisAlaLysLys : ::       ::: AAGAATTGTAGCTAAAGAAAAGAGATG	1244 6186
LeuAsnArgLysTyrGluGluValCysGluGluVa 1244    :::::    	LeuAlaAsn	1230 6136
AGTTGAAGAAGCAATTTGAGCCAAACTATCTATGCAAGTGTGAG 6135	TGGAAC	6086
rGlnIles ::: GAGTCAT!		· ω μ
alValAspLeuSerLysTyrLys 1213 :: ::   :::   TCCAAGAACTTCAGAAAAAAGAACTTCAACT 6035		1200 5998
rGluIleGlnAsnThrLysGlnAlaLeuLys 1199 	luValSerLysLeuGlnSerGluIleGI :::::    :::    AAATTTCAGACATTCAAAAGGATTTAGE	1183 5948
LysGluGluSerGlnAsnLysThrGluG 1183	ELYSAlaSerLeuArgGluLySGluGluG :::          TGTTGATAAACTTAGAGAAAAAATTTCAG	1166 5907
IsLeuGlnVəlLysGluAlaPheGluLysGluValGlyIleIl 1166 	AlaGluH :::: CAACAGG	1150 5857
ArgGlnMetLeuGluAsnGlnLysAsnSerSerValProLeu 1149 :::::	hrGlnLeu [[]]]] ACCAACTC	1133 5807
GlnArgCysTyrGluLysGluGlnGlnThrValT 1133 :::        TAAGAAGAGTAGAGGAGACACTCAAACTGGAGAGAG 5806	SThrLys   :::   AGAAAGAGATAATC	1119 5757
LeuLysLysSerLeuSerGlyThrIleGluThrLeuLysGluGluLeuLy 1119		1103 5707
roLeuGluGlnValGluSer 1102     :::::::::     TGTGAGTAAATTAGAAATAGAGAATTTAAAT 5706	0 euGlnLysGlnHisValProLeuGluGlnValGlu ::::     ::     ::::::   7 TAAAAGACCAAAGCTTAACTCTGAGTAAATTAGAAAT	1090 5657
GluAsnAlaLysGlnThrSerGluIleLeuAlaAlaGlnThrLeuL 1090     :::    :::::      :::  GAGACACAGAAAAAGTGTCTGAAATGGAGCAACTAAAGAAACAAA 5656	IGIU  ::: CAAT	1073 5607

.....ArgLeuLysGlnAlaLeuAsnGlyLeuSerGlnL 1324

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seq_documentation_block:
ID AAT58751 standard; cDNA; 4779 BP
XX AAT58751;
XX O9-MAR-1997 (first entry)
XX Nucleolar/endosomal auto-antigen
XX Auto-antibody; p162; rheumatic d
XX Auto-antibody; ss.
XX Homo sapiens.
XX Homo sapiens.
XX Location/Ousliff
FT CDS /*tag- a
XX Auto-antibodies
XX PD 12-SEP-1996.
XX PD 12-SEP-1996.
XX PD 12-SEP-1995; 95DE-1015514.
XX PD 12-APR-1995; 95DE-1015514.
XX PD 
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                                                                                                   alignment_scores:
Percent
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                                                                                                                                                                                                                                                                                                              Transformed cells can be cultured to produce the antigen p162, for in exact (differential) diagnosis of rheumatic disease, i.e. they can detect, in immunoassays, western, etc., rheumatism-specific auto-antibodies. The antigen can be used therapeutically, in the removal of auto-antibodies from the circulation, or when coupled to a cytotoxin, the elimination of auto-antibody-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Auto-antibody; p162; rheumatic disease; antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleolar/endosomal auto-antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA encoding nucleolar endosomal auto-antigen - useful for exact diagnosis of rheumatic disease, in gene therapy and for removal of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            euThrTyrGlySer...GlySerProSerLysArgGlnSerGlnLeuIle 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAA.....GATTGTGATGTACCATCCAGAGAATTA 6654
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Similarity:
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                             Quality:
Ratio:
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71..4306
628.00
0.867
53.118
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                                                                                                                                                                                                                  801 C; 1007 G; 1055 T; 0 other;
   Percent Identity:
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alignment_block:
US-09-750-590-2
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1016
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                                                                                                    417
                                                                                                                                   930 TACAGGAACTACAAAAACTGAAAAGTTCAGTTAATGAATTAACACAAAAA
                                                                                                                                                                                                          910
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                                                                                                                                                                                                                                                                                                                                                                               355 laLeuLysSerArgPheLysTyrPheGluSerAspHisLeuGlySerGly 371
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTCTTCGAGAAGCTGCTGAACAAAAAGTGACACGTCTGACAGAAGAAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACTTGCTACTGAAATTGCAGATATAAAGTCAAAGTATGATGAAGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AspLeuGluIleGluAsnGluAspLeuLysGluArgLeuArgLysIleGl 301
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                                                                                     AsnGlnAlaSerTyrSerGluAsnGluIleLeuLysLysGluLeuGluAl 433
                                                                                                                                                                  etGlnSerArgSerMetLeuArgProLeu.....GluLeuAlaLeuPro
                                                                                                                                                                                                                                        nMetTyrMetThrAspSerGlnCysThrSerThrGlyMetProValHisM 402
                                                                                                                                                                                                                                                                                                                                                  TCAAACACTAATGGATAACATGACCTTGGAACGTGAGCGAGAATCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGACCTGGTATAGAAGATGTTGCCGTGCTAAAGAAAGAACTGGTCCAAGT
                           aMetArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuGlnA 450
                                                                                                                                                                                                          CCAGGAAGTTGCT.....
                                                                                                                                                                                                                                                                                                           .....SerHisPheArgLysGluAspMetLeuLeuLysGlnGlyGl
                                                                   AATCAG.
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w	lAsoAsoLeuThrThr 723	alCysLeuAspAsnLysLeuLeuThrGlnGlnVa	707
20	AACTAACAGAGAAGC 18	AGAAAAAAACCATACACTACAGGAGCAAGTAACT	.771
7	<u>`</u>	erLysAsnGlnThrLeuGlnLysGluI]	694
70	::::::::   :::::::::   CTTAACCAGTTACA 17	AATTCAGGCTGGTGAAGGAGAGACTGCTGTT	724
23	TTATGCA 17	alenginginivesergivein	678
7	uLysSer 67	HisValLy	674
73	CAGAAGA 16	ъ.	1624
Üī	AlaGln. 66	rArgProLeuLysArgGluLeuGluAsnLeuLysAlaLysLeu	649
23	:: AAAT 16	GCAAAACTTCGAGAAGCTCAGAATGATTTGGAACAAGTTCTACGTC	1574
9	luTh 64	LysLeuIleAspValGluArgGluTyrGlu	634
73	TCAGCAAAGCACCACG 15	AAACAAAGCAACAGCATCAAGAACAACAGGCTCT	1524
23	ATCAATTAGATA 15	MHOGMANANGITACAAAIT ALva	631
ī	GluL 63	nMetLysSerLeuLeuSerAsnGluLeuAsn	سز ز
173	:::::::    ::: TCTCGGTTAGAAGAGCA 147	TACAACTCAAACTT	1439
9	AlaGluLysPheGluAs 619	AspLeuSerAlaLysLeuAlaLeuSerIlePro	603
138	14	AGAGACAGCTTTCAAGTGAAAAGTTGATGGATAAAGAACAACAAGTGGCT	1389
N	60	- Ar	586
38.8	13	TCTGGAGACAGAGCGCCAACTAGGGGAAGCTCATGGTAGGCTGAAGGAAC	w
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9	56	CAGCATGGGTTACAAGTOCAAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAGTACAAAAAAAA	557 1289
288	12	ATCTAAAGG	w
56	 	lyAlaSerAlaGluValGlyLys :::	54
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40	luG 54	.MetGluGluLeuLysAspGlnLeuLysAspMetLysValLysTyrG	524
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83	GlnLeuGluAspAl 4	GluArgValLysGluAspSerAspGluGlnl	467
036	:		1036
66	ys 4	$oldsymbol{0}$ snGluLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluC	450

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927 pAsnSerAlaGluIleLeuAlaLysTyrLysLysSerGlnGluGlu 942	92
914LysMetSerGlyLeuArgLysSerMetLysLysValGlnAs 927 ::::::   :::::::::     ::::   2621 TTAATGACAGAGCTTTCTACAGTAAAGGACAAACTATCAAAAGTTTCTGA 2670	91 262
912 luGlu	57
95 21	52
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867ValAspValLysLysLysCysGluAspIleAsnGln 878 :::   :::::        2421 CAAGATTGGATCTACAGAAAAAATCTGAAGCCCTTGAAAGTATCAAGCAA 2470	86 242
859 uAspLysThrasnargGluLeu	237
843 ValProValLysThrHisGluGluIleLysThrAlaLeuSerSerThrLe 859 :::::::::::::::::::::::::::::::	232
826 erLeuMetSerGluAsnAsnAspLeuLysLysThrMetSerHisGlnTyr 842 ::   :::::::::::::::::::::::::::::::::	N) CO
809 nLeuSerGluLeuAsnLysLysCysGlyGluAspGlnGluLysIleTyrS 826 : ::   ::::	222
793 GluLysGluMetMetAlaLeuLysSerAsnIleThrGluLeuLysLysGl 809 ::::::::::::::::::::::::::::::::::::	79 217
776 erLysasnValSerArgLeuGluThrValPheIleProProGluArgHis 792 ::   ::::::::	7: 21:
771SerLeuS 776SerLeuS 776SerLeuS 776SerLeuS 776	7. 20.
769 Leumet	20
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738 sSerHisAspValIleValAspAspLeuAsnLysLysLeuSerAspValT 755     :::::    :::::     :::::     :::::	19
724 GluMetLysAsnValProLeuLysValSerGluGluMetLysLy 738 ::::::	7 18
1821 TGAAGAATCAGTCAGAAAGTCATAAACAAGCCCAGGAGAATTTGCATGAC 1870	18

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                                                                                                                                                                                                                                                                    luSerLeuLysLysSerLeuSerGlyThrIleGluThrLeuLysGluGlu 1117
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                                                                                                            nLeuArgGlnMetLeuGluAsnGlnLysAsnSerSerValProLeuAlaG
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                                                                                                                                                                                      LeuLysThrLysGlnArgCysTyrGluLysGluGlnGlnThrValThrGl 1134
                                                                                                                                                                                                                                   AAGAAATTAAATGTAGACAAGAAAAAGAAATCACTAAACTAAACGAAGAA
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ACTCCCTG..
                                                                           TGCTAAACAGCTTCTAATTCAGCAGAAATTAGAACTTCAAGGAAAAGCGG
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25-APR-2000;
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19-JUL-2000;
03-AUG-2000;
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                                                                                                                                                                                                                        Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; platheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation; chemokinetic; thrombolytic; drug screening; arthritis;
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                                                                                                                                                                                                                                                                                                           Human polynucleotide SEQ ID NO 4028.
                                                                                                                                                                                                                                                                                                                                                                                               AAI60039 standard;
                                                                                                                                                                                                                                                                                                                                        22-OCT-2001 (first entry)
                                                                                                 26-DEC-2000;
                                                                                                                             26-JUL-2001
                                                                                                                                                         WO200153312-A1
                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                               leukaemia; ss.
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2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0662191.
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alignment_block:
US-09-750-590-2 x AAI60039/rev
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                                                                                              5661 AAGAAGTAAAAACTTTAACTCAAGAAAAAGATGATCTAAAA...CAACTC 5615
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Wang J,
Zhao QA,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Note: The sequence data for this patent did not form part of the printed specification.
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29-NOV-2000; 2000US-0727344.
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AsnGluGluValMetVal...AlaAspAspLeuGluSerGlu......
                                                                                                                                                                                                                           TGTAGAAAGGGAGAAAACACTGATTACTGAGAAACTGCAGCAAACTTTAG 5662
                                                                                                                                                                                                                                                                              pLeuGluIleGluAsnGluAspLeuLysGluArgLeuArgLysIleGlnG
                                                                                                                                                                                                                                                                                                                                                        ATGGAACAGCTGAAGGAACAATTAGAAAATAGAGATTCTCCGCTGCAAAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAAACACGTGAGGTTCAAGAAAGA......
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                                                                                                                                                           lnGluGlnArgIleLeuLeuAspLysValAsnGlyLeuGlnLeuGlnLeu 318
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Ratio:
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Wang Z,
Zhou P,
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51.750
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Wehrman T, X
, Goodrich R,
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Gaps: 59
Percent Identity: 21.551
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Xu C, Xue AJ,
R, Drmanac RT;
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Yang Y,
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Zhang J;
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7	::::::::::::::::::::::::::::::::::::::	4837
583	GlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMetC	567
4838	) snGlnIleLysGlnAsnGluMetLeuValGluGluPheLysArgAspGlu::::::::::::::::::::::::::::::::::::	4869
1 550 : 4870	PMetLysValLysTy1:::::: CAAAGAATTGACATTC	ri ii
4920	7 AlaThrGlyAsnHisArgLeuMetGluGluLeuLysAspGlnLeuLysAs :::   :::    :::::     ::: 3ATAGAGAATTTAAAGAATGAATTAAAGAA	ت خ
4949	AA	4950
516	<pre>lnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuThrSerAspAla ::</pre>	500
3 500 3 4951	3 aLeuLysaspValGlnLysargMetTyrGluSerGluGlyLysValLysG 	483 5000
1 483	GAAGAAAAACTAA	5050
tn &	alAlaGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGlu ;; ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	10 0
V 456 : A 5101	PSeralaLysGlnAspArgLeuLysLeuGlnAsnGl 	i in i
s 439 A 5151	AATATTGAAATG	5200
. 431 A 5201	SIGINALaSerTyrSerGluAsnGluIleLeuLysLysGluLeu :::::::::::::::::::::::::::::::::	417 5250
A 417 T 5251	rArgSerMetLeuArgP :   ::::::: AAGGAAGATATTTTCTT	5300
e 404 ; A 5301	MetThrAspSerGlnCysThrSerThrGlyMetProValHisMetGlnS :::	5338
r 387 A 5339	TTGGCATAGATAAAAAAC	375 5388
. 374 G 5389		ω -
	7 LysSerArgPheLysTyr       ::::: 6 AAATCGAAAATT	357 5476 . 373
u 356    A 5477	laAlaLysGluLysGlnHisGluGluSerLe ::: 	340 5514
uA 340 TG 5515	TACTGTTAACATGAATATAGATACTCAAGAACAATTACGAAATGCTCT	5564
55	CAAGAAAGCTTGCAAATTGAGAGGGACCAACTCAAAAG	561

845 V 4009 C	829 e 1 4059 C	812 u 4109 T	796 Me 11 4159 AT	783 11 4206 A	766 uLy ::: 4247 AGA	752 Ser. ::: 4297 GCT	735 lu 4347 CC	718 1 <i>t</i> 394 A <i>t</i>	704 Il :: 4444 AT	689 rg 4494 TA	677 4544 TG	664 AL 4591 CA	647 sn 4618	630 uLy       4646 GAA	614 AL 4696 CT	600 4740 CAG	583 sG         1790 TG
alLysThrHi ::::   :: TGGAAACTGA	rGluAsnAsn     :::::  TGAAAGTGAC	uLeuAsnLysL ::::    : TGTAGCTAAGG	etMetAlaLeuLy:   :::::   ::  GCTCGGATTGTC	1Phe	sLeuLeuM ; A	ASPVALT ;;; AAAATCC	MetLysLys ::::: CTTGAAGTT	LASNASNLeuT	eGluLysVa :   ::::: GGAAAGGCT	gIleThrGluL ;;; AACAGAACAGT	TGAAAAAAGT	laGlnH1sVal :::::::: AAGAAGAGATC	GluThrArgP	SALALYSI   ::: GACAGCTO	aGluLysPhe :::::: AAAAGAACAC	GGCCTACAAAC	luLeuGluAr           AAACAGAGAG
isGluGluIle  ::      :::  AAGAGGAACTT	AspLeuLysL :::     : :CAGCTCAAAG	LysCysGlyGl :::: :GAGAAAGATGA	uLysSerAsn  ::::::: GTCCAAAAGA	> ∺	tGluAsr :::::: . AAAGAC	Hislyst :::::: GAGTCTC	SerHisAspV :::      PAAACATGACC	hrThrGluMe              CCAAGGAAAG	lCysLeuAspA :    :::: CAGGTTGAATG	LeuThrSerLy    :::   TCCACAACCAA	.SerArgLe    ::: CAGTGAGAC	LysProGlu	roLeuLysA	eAs AAA	GluAsnMet ::::: CAAGAAACT	uLysAspL    ::: CAAAGAA.	gGluLysArg  :::  AGACCACCTT
LysThrAla    :::     AAAGTTGCT	LysThrMetSe :::::::::: GAAAACATAAA	uAspGl :    CCTACA	IleThr	lu ;; attcag	uSe:	yrThrG ::: AAAGCAAACAAG	'alileValAsp. ::: AGCTGAAAGAA	tLysAsnVal    :::  AGACAACCTT	snLysLeu ::   ::: AAAAATTT	ysAsnGlnTh   ::::::   AGGACTCAAC	uGluGlnLys :::::: :TCAGGAAACA	luHisGluG      :  TTCATGAGG	gGluLeuGl :::      .GACTTAGA	. 90	ysserI ::: TTGATO	euSerAlaLysLev :::     :: GAACTAAAAAT"	GlyargLys AGAGGATAT
CATTGTTGCC	rH1sGlnTy :::: AGAAATTGT	uLysileTyrS ; GCTGCAAGAAG	76 :	ArgH1sG       CACTACTAAGGATAG	Lysasnval           AAATCGTC	lulyslysl   :::::  nacagtcct	AspLeuAs ::::: CATATTAG	ProLeuLys AAAACG	euThrGlnG :::  AAGAAAGTC	rLe       AACACTGGC	SerGlyGlu :::    ATGAATGA	euLys. ;;; AAGAGT	> ≺	luTyro	.euLeuSerAsnGlui     ;::::::	IGC:	LeuThrGluM :::    : ATAAGAGAAA
TGAAAGAACA	rValPro ;;; AGCTAAACAC	TyrSerLeuMetS    :::  BAAGTTCTTCAAT	InLeuSerGl ::::::::::: AAATGAAATC	SGluLySGlu      AGAAATAGAA	SerArgLeuG    :::::  AGTGAGATGG	euGluMetGl   :::   :: TAAATATGAA	nLysLysLeu ::::      AGAAACTTTG	ValSerGluG ::::::     ATAAAAGAAG	lnva    ;;  AGGAAGAGAT	uGlnLysGlu ::: AAGAATAGAA	11euGlyLysA      CTGGAGTTAT	стесст	AlaLysL :::     ACCAAAT	rgs	uLeuAsnGl ::::::   CGTATCTGA	SerIlePro	etGluGly. ::   ::: TTGAAGCTA
854 3960	844	4060	812	795	783 4207	766 4248	751 4298	735 4348	718 4395	703	689 4495	676 4545	663 4592	647 4619	630 4647	613 4697	599 4741

1040	1024 3109	1007 3159	996 3209	3259	995	989 3309	977 3359	969 3409	953 3459	942 3509	939 3559	927 3609	919 3659	917 3709	900 3759	885 3809	878 3859	865 3909	855 3959
rGluArgAlaLeuSerArgLysThrGluGluLeuAsnA	GlnLysAspLeuLysAspLysAsnValHisIleGluAsnSerTyrGluTh	ysLysCysLysGlnGluAsnAspLysLeuLysLysGluIleLeuThrLeu 		CTAAAAATTGTTCACATGCATCTGAAGGAGCACCAAGAAACTATTGATAA		ysGluGlnLeuSerGlnGln	TGACCTTAGGAGTGTGGAGGAGACTCTCAAAGTAGAGAGAG	AlaProIleIleSerLeuGluGlu	nGluCysIleLysLeuLysTyr :        :::    AACGGAGAATATAAGGTTGACTCAG	TCAGGAGAAAATGTGTGAAATAAGAACACTTGAAGGAGCAATTTGAGACCC 3	SerGlnGlu9 [          TCTCAAGAAAAAGAATATCAGTTTCTTAAGATGACAGCTGTCAATGAGAC 3	AspasnSeralaGluIleLeuAlaLysTyrLysLys S :::   :::      :::            ::: GAGACCAACTGAAAGAAACACTAAAGAAATTGTAGCTAAAATGAAAGAA		G1yLeu	<pre>InValLysAlaGluTyrIleSerLeuArgGluHisGluGluLysMetSer 9 ::       :::     :::     :::        aTCGCAAAGCCAAGGATTCAGCACTACAAAGTATAGAAAGTAAGATGCTC 3</pre>	pgluAsnGluIleLeuLysArgAsnLeuGluAsnThrGlnAsnG 9 : :::   ::: : :::   ::: AATTAGTGAGGTTCAGGAAAAAGTGAATGAACTGAAACAATTCAAGGAGC 3		luLeuValAspValLysLysLysCysGluAspIlcAsn	LeuSerSerThrLeuAspLysThrAsnArgG 8
1053	1040 3060	1023 3110	1007 3160	3210	995	995 3260	989 3310	976 3360	968 3410	953 3460	941 3510	938 3560	3610	918 3660	916 3710	900 3760	885 3810	877 3860	865 3910

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1263 eSerIleGluGlnGluIleLysAspGlnGlnGluArgCysAspLysSerL 1280
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3059 TATTGACAAACTCAGAGGAATTGTTTCTGAGAAGACAGATAAACTATCAA
                                                              AGAGACCGACAGAACCACCAAGTAAAACCTGAAAAAAGGTTACTAAGTGA 2181
                                                                                                                                                                                                                                                                                                                             ATGGATAACTTCCAGTTGACTAAGAAACTTCATGAAAGCCCTTGAAGAAAT 2331
                                                                                                                                                                                                                                       AAGAATTGTAGCTAAAGAAAGAGAGGATGAGCTAAGGAGGATAAAAGAATCTC
                                                                                                                                                                                                                                                                                                                                                                    LeuAlaAsn.....LeuAsnArgLysTyrGluGluValCysGluGluVa 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTTAGAGTGAAAGAAGATGTCAATATGAGTCATAAAAAAATTAATGAAA 2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eLysAlaSerLeuArgGluLysGluGluGluSerGlnAsnLysThrGluG 1183
                                                                                          .....LysGluLeuSerAla 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAA.....AAGATCCAAGAACTTCAGAAAAAAGAACTTCAACT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAAAGACCAAAGCTTAACTCTGAGTAAATTAGAAATAGAGAATTTAAAT
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seq_documentation_block:
ID AAA09326 standard; DNA; 6773 BP
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                                                                                                                                                                    Obata Y, Gou
Stockert E,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1992
AAA09321-45 were isolated by SEREX screening from a renal cancer cell line 1973/10.4. Homology searching revealed that these clones
                                                    Claim 57; Page 97-99; 121pp; English.
                                                                                 Preventing, diagnosing and/or treating disorders associated abnormal expression of human cancer associated antigens
                                                                                                                                                                                                                                                      05-OCT-1998;
05-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1324 euThrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuIleAsp 1340
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2092 TATGAGTGCTTGAATAGATTGTCTCTTGACTTGGAGAAGGAAATTGAATT
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                                                                                                                                         WPI; 2000-303774/26.
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                                                                                                                                                                                                                                                                                                       04-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                     WO200020587-A2
                                                                                                                                                                                                                                                                                                                                                                                                                              renal cancer; cancer associated antigen precursor; diagnosis; cytostatic; KIAA0336 mRNA tag; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human cancer associated antigen precursor DNA, clone NY-REN-53
                                                                                                                                                                                                                     (LUDW-) LUDWIG INST CANCER RES
                                                                                                                                                                                                                                                                                                                                        13-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IleGluAlaLysAspAsnLysIleThrGluLeuLeuAsnAspValGlu. 1312
                                                                                                                                                                   Gout I, Tureci O, E, Chen Y, Old LJ,
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98US-0166350
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, Jager E,
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Knuth A;
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alignment\_scores: Quality: Ratio: alignment\_block: Align seg 1/1 to: AAA09326 US-09-750-590-2 x AAA09326 Percent Similarity: 1197 1047 correspond to known genes. The present sequence has identity with the KIAA0336 mRNA tag gene. The genes encode cancer associated antigen diagnosins. These gene products are useful in methods for preventing, ediagnosing and/or treating disorders, especially cancer, associated with abnormal expression of human cancer associated antigens. The method comprises contacting a sample from a subject with an agent that specifically binds to the nucleic acid molecule or expression product (or fragment) complexed with a human leukocyte antigen (HLA) molecule and determining the interaction between the agent and the nucleic acid molecule or the expression product as a determination of the disorder. 1216 1147 1097 1216 1217 361 347 334 319 997 305 glleLeuLeuAspLysVal.......AspGlyLeuGlnLeuGlnLeuA 319 289 GluAsnGluAspLeuLysGluArgLeuArgLysIleGlnGlnGluGlnAr 305 918 272 881 854 TTAAGGAAAGCCACCTCAAATGCAAAC...... 239 LeuLysThrAlaSerGluAsnSerAsnLysGlyArgGluLeuTrpLysLy 255 Sequence 6773 BP; 2566 A; 1092 C; 1363 G; 1752 T; 0 other; 411 255 sGlyProSerLeuGlnGlnArgAsnLeuSerGlnMetLeuAspGluValA 272 TATCTTAAAAGATGAGGTAACTTATATGAATAATCTTAAGTTAAAAACTTG 1046 snThrLysSerAsnGlnArgGluHisGlnAsnIleGlnAspLeuGluIle 288 snGluGluValMet...ValAlaAspAspLeuGluSerGluLysGlu... 333 ATACATTTGTAGAACAAGTAGTAAATGAAAAAGTCAAACACTTAGAA... ysTyrPheGluSerAspHisLeuGlySerGlySerHisPheArgLysGlu 377 AAATGGATGCTCAACATATAAAGGATGAGTTTTTTCATGAACGGGAAGAC 1096 LysLysGluLeu.. .....AACAGAGAAGTACAGAGTCTTAAGGAACAACAT 1249 euGluLeuAlaLeuProAsnGlnAlaSerTyrSerGluAsnGluIleLeu 427 AspMetLeuLeuLysGlnGlyGlnMetTyrMetThrAspSerGlnCysTh 394 GCTATACTGTAGAACAGCAT... .....GATACCTTAAAAGAACTTGAATCTCAACACAG 996 rSerThrGlyMetProValHisMetGlnSerArgSerMetLeuArgProL 411 ......GluGluSerLeuArgThrIleGluAlaLeuLysSerArgPheL 361 619.00 0.934 53.815 .GluAlaMetArgThrPheCysAspSerAlaLysGl 443 from: 1 Length: 1232
Gaps: 53
Percent Identity: 23.133 . . 6773 ..... 1216 ...... 1216 964 917

NJ i	AAAAGGATCAAAATGACCAAAAACIAGAAAAAGATTATATATATATATATATATATATATATAT	
710 1966	69	
694 1919	678 gLeuGluGlnLysSerGlyGluLeuGlyLysArgIleThrGluLeuT:	
678 1869	662 LysLeuAlaGlnHisValLysProGluGluHisGluGlnLeuLysSerAr :::   ::::	
661 1825	645 erLeuAsnGluThrargProLeuLysArgGluLeuGluAsnLeuLysAla 	
645 1778	aLysLysLeuIleAspValGluArgGluTyrGluArgS 	
629 1728	LeuLeuSerAsnGluLeuAs     :::   :: AATTCTCTTAC	
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596 1679	ArgLysLeuThrG :::   ::: TACTTACTTAGTCTCAGTC	
586 1629	GlnLysGluLeuSerMetCysGluLeuGlu    :::         :::         :::         :::	ш
573 1582	GluGluPheLysArgAspGluGlyLysLeuMetGluGluAsn      :::    :::      AnactGTGAATCGCCTGCAGGGA	_
557 1544	aGluValGlyLysLeuArgAsnGlnIleLysGlnAsnGluM          :: :: :::::::::::::::::::::::	ل د
540 1513	etLysValLysTyrGluGl	L
523 1507	hrGlyAsnHisArgLeu    :::    CATGAACTG	L
507 1469	heLeuA    :  CGAAT	<b>₽</b>
490 1428	477 IleLysGlnLeuGluAspAlaLeuLysAspValGlnLysAr    :::::::::::::::::::::::::::::::::::	1
476 1378	460 ysalaLeuAlaLeuGluCysGluArgValLysGluAspSerAspGluGln 4 :::::    :::     ::::::::::::::::::::	<b>_</b>
460 1328	443 nAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysValAlaGluCysL::::::        :::    :::   :::      :::	<b>L</b>
N	TTTTGTCAGATTCAGAAAA 1	H

,	A PRIMARY I CICICIGAAGACAAGAAGTATTGTCAGCTGAAGTGAAGTC	2016
2017	TCTTTATGAGG	740
740 2067	isAspVallleValAspAspLeuAsnLysLysLeuSerAspValThrHis 7	756
757 2111	TyrThrGluLysLysLeuGluMetGl	
769 2155	uMetGluAsnAlaSerLeuSerLysAsnValSerArgLeuGluT 7 :     ::: ;::    ;:: ;:::::::::::::::::	84
784 2205	hrValPheIleProProGluArgHisGluLysGluMetMetAla 7 :::   ::: ::           :::	98
799 2255	LeulysSerAsnIleThrGluLeuLys8     ::: :::        GAAGTTTCAGAAGACAGTGAAGAAGAAGATGTTGTTAATGTCCTACAGGC 2	304
808 2305	LysGlnLeuSerGluLeuAsnLysLysCysGly 8 ::::::   ::::::    ::::::    :::      ::: AGTCGGTGAATCCTTGGCAAAAATAAATGAGGAAAAATGCAACCTGGCTT 2	18
819 2355	GluAspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAspLeu 8 :::      :::     :::    ::: TTCAGCGTGATGAAAAAGTATTAGAGTTAGAAAAAGAGATTAAGTGCCTT 2	34 404
835 2405	rMetSerHisGlnTyrValProValLysThr       ::::   :::   GAGTGTAGTTCAGTGTGAAGAACTTAAGTCTTTATT	47 454
848 2455	eLysThrAlaLeuSerSerThrLeuAspLysThrAsnA 8     :::      GAAGTTCTCTTAAGGA 2	483
864 2484	GluAspIleAsnGlnGluPhe 8      ::::::::::::::::::::::::::::::::	80 533
881 2534	luasnGluileLeuLysArgAsnLeuGluAsnTh 8             :::	97 577
897 2578	nValLysAlaGluTyrIleSerLeuA 9 ::::::::    ::::::::    AATTCAAGTTGAAGAAGTATCTCAAACATGTAGCAAAAGTG 2	09 627
909 2628	rGlyLeuArgLysSerMetLysLysVal 9 :::    :::  GAAAAATGTTTTTATAAAGGAA 2	25 665
926 2666	rAlaGluIleLeuAlaLysTyrLysLysSerGlnGluGl 9 :::    :::    AAAGCCACTACTAGAACAAAAAGA 2	42 700
942 2701	laAlaGlnLysargGluLeuaspT 9 	59 741
959 2742	hrIleGlnGluCysIleLysLeuLysTyrAlaProIleIleSerLeuGlu 9 :::::	75 791
976 2792	GluCysGluArgLysPheLysAlaThrGluLysGluLeuLysGluGlnLe 9	92

1267	ASPOTULYSGIULEULEUHISFNESETILGIUGIN	3554
3553	TITUSHUCANGAAAIAAAAAACAGAAACAAAAACAAAAACAAAAACAAAAAAAA	, (
25		1239
1239 3503	nIleSerAspLeuAsnGluLysLeuAlaAsnLeuAsnArgLysTyrGluG::::::::	1222 3454
1222 3453	AlaThrLysSeraspLeuGluThrGl	· 1214 3404
1213 3403	GluThrargGluValValAspLeuSerLysTyrLys	1197 3360
1197 3359	SThrGluGluValSerLysLeuGlnSerGluIleGlnAsnThrLysGlnA :::::   :::   :::   :::   :::   :::  TGTAAATGAACTTGAAGAACTTCAGGTACAACTTCAAAAGGAAAAGAAAC	1180 3310
1180 3309	GlyIleIleLysAlaSerLeuArgGluLysGluGluGluSerGlnAsnLy	1164 3260
1163 3259	alProLeuAlaGluHisLeuGlnValLysGluAlaPheGluLysGluVal	1147 3210
1147 3209	nThrValThrGlnLeuArgGlnMetLauGluAsnGlnLysAsnSerSerV:::          ::  :::	1130 3188
3187	TTACAG	18
1130	LeuLysGluGluLeuLysThrLysGlnAr	1114
1113 3181	euGluGlnValGluSerLeuLysLysSerLeuSerGlyThrIleGluThr	1097 3132
1097 3131	rSerGlulleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHisValProL 	1080 3088
1080 3087	LysGluLysLeuvalGluGluAsnAlaLysGlnTh 	1069 3038
1068 3037	eugln	1059 2988
1059 2987	2 gAlaLeuSerArgLysThrGluGluLeuAsnArgGlnLeuLysAspLeuL::::    :::::::	1042 2939
1042 2938	> AspLeuLysAspLysAsnValHisIleGluAsnSerTyrGluThrGluAr ::   :::   GAACTTGAA	2930
1025 2929	ysLysGln ::   ::: CAAAGAAA	1009 2880
1009 2879	2 uSerGLnGLnThrGlnLysTyrAsnThrSerGluGluGluAlaLysLysC :::	992 2837

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1272

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seq_documentation_block:
ID AAV21518 standard; cDNA; 51
XX AAV21518;
XX 17-AUG-1998 (first entry)
XX 25 Rattus norvegicus mutant a.
XX Actin binding domain; alph
KW Actin binding domain; alph
KW exercise; effects; identif;
KW dilated or hypertrophic ca.
KW tricuspid stenosis; constr
KW acute infective endocardit
KW primary myocardial disease
KW primary myocardial disease
KW primary myotardial 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actin binding domain; alpha myosin heavy chain; bridging; mouse; transgenic mammal; congestive heart failure; study; treatment; diet exercise; effects; identification; hypertrophic cardio-myopathy, dilated or hypertrophic cardiomyopathy; acute sortic regurgitation; tricuspid stenosis; constrictive pericarditis; hypertension; acute infective endocarditis; tochaemic heart disease; primary myocardial disease; valvular disease; pericardital disease; hyperthyroidism; anaemia; arteriovenous fistula; beri-beri;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus mutant alpha-myosin heavy chain transgene
            Transgenic mouse models for congestive heart failure and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Paget's disease; transgene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAAGCAAGCAGAAACTGATCACTTAATACTTCAAGCATCTTTAAAAGGT 3703
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lnGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGlnArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /SIDS2/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV21518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                       96US-0026742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97WO-US17296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
1..5661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= a
/product= "mutant alpha-myosin heavy chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....ACCTCTGCGGAACAGCACCAGCGTACG 3823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5661
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                diet;
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hypertrophic cardio-myopathy - used to study molecular and cellular events, identify potential therapeutic agents, assess effects of
                                                                                                       diet etc.
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Claim 39; Pages 43-53; 75pp; English

The sequence is that of a mutant rat alpha-myosin heavy chain gene which was used in the development of transgenic mammals, specifically mice. They can be used as a model for studying congestive heart failure (CHF) or hypertrophic cardiomyopathy. Such animals are used to study molecular and cellular events associated with CHF; to identify compounds for treating CHF, and in evaluating effects of diet and exercise on CHF. Conditions associated with that can be evaluated this way are dilated or hypertrophic cardiomyopathy; acute aortic regurgitation; tricuspid stenosis; constrictive pericarditis; acute infective endocarditis; ischaemic heart disease; hypertension; primary myocardial disease; valvular or pericardal disease; hyperthyroidism; anaemia; arteriovenous fistula; beri-beri and Paget's disease.

Sequence 5661 BP; 1572 A; 1446 C; 1797 G; 846 T; 0 other;

alignment\_block: alignment\_scores: US-09-750-590-2 x AAV21518 Align seg 1/1 to: Percent Similarity: 1999 1949 1899 1849 1749 1699 ACACTCTTCTCCACCTATGCTTCTGCTGATACCGGTGACAGTGGGAAAGG 249 275 296 261 237 ThrLeuLeuLysThrAlaSerGlu.....AsnSerAsnLysGl CAAAGGAGGCAAGAAAGACTCATCCTTCCAGACAGTGTCTGCTCTCC 1798 GTATCCGCATCTGTAGGAAGGGCTTCCCCAACCGCATTCTTTATGGGGAC 1998 nAspLeuGluIleGluAsnGluAspLeuLys......GluA 296 CACTTTGTGCGCTGCATCATCCCCAATGAGCGGAAGGCTCCAGGGGTGAT 1898 ...GlnArgAsnLeuSerGlnMetLeuAspGluValAsnThrLys..... rgLeuArg..... GGACAACCCCCTGGTCATGCACCAGCTGCGATGCAACGGAGTGCTGGAGG 1948 ACCGGGAAAATCTGAACAAGCTGATGACAAACCTGAGGACCACCCATCCT 1848 .....LysSerLeuLeuAlaAlaLysGluLysGlnHisGluGl 348 ....LeuAspLysValAsnGlyLeuGlnLeuGlnLeuAsnGluGluValM 323 TTCCGGCAGAGGTATCGAATCCTGAACCCAGCAGCCATCCCTGAGGGCCA 2048 TGGGCTCCCTGGACATTGACCACAACCAGTACAAGTTTGGCCACACCAAG etValAlaAspAspLeuGluSerGluLysGluLysLeu..... ATTCATTGATAGCGGGAAAAGGGGCT...........GAGAAGCTGC Quality: Ratio: AAV21518 600.00 0.805 54.380 .SerAsnGlnArgGluHisGlnAsnIleGl from: 1 Percent Identity: to: 5661 .....Lys 54 20.949 2083 1748 307

2134 GTGTTCTTCAAGGCGGGCTGCTGGGGGCTGCTGGAGGAGATGCGAGATGA 2183

566	GlnAsnGluMetLeuValGluGluPheLysArgAspG	554
3047	GCAAAGCGGAAGCTGGAGGGTGACCTGAAGCTGACCCAGGAGAGCATCAT	
553		553
2997	AGGGATCCCTGGAGCAGGAGAAGAAGGTGCGCATGGACCTC	4
553	rGluGlyAlaSerAlaGluValGlyLysLeuArgAsn(	ω
2947	GG₽	898
538	MetLysValLys	534
2897	GAGGCCCACCAGCAAGCCCTAGATGACCTTCAGG	848
533	GluLeuLysAsp	526
525 2847	YSU-UHISH-GUTITISETASPALBALBTITIGLYASSHILSAFGLEWHETGU 	804
00	CGCAACAGAGAACAAGGTTAAAAAACCTGACAGAGGAGATGGCCGGGCT	754
509	rGluSerGluGlyLysValLysGlnMetGlnThrHisPheLeuAlat	9
7		716
492	GlnIleLysGlnLeuGluAspAlaLeuLysAspValGlnLysArgMetTy	476
475 2715	ysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSerAspGlu:::	459 666
2665	CGAGAGGCTGGAGGACGAGGAGATGAACGCCGAGCTCACGGCCAAGA	616
459	spArgLeuLysLeuGlnAsnGluLeuAlaHisLysValAla	443
Ö	GAGGCCAAGGTGAAGGAGATGA	584
443	${ t GluAlaMetArgThrPheCysAspSerAlaLys.}$	431
430 2583	erGlussnGluIleLeuLysLysGlu :::::: acaaccTGGCaGATGCCGAGGAGCGCTGCGACCAGCTGATCAAGAACAAG	534
2533	CCTGCTGCAGGAGAAGAATGACCTGCAGCTCCAAGTGCAGGCGC	, α
22	rMetLeuArgProLeuGluLeuAlaLeuProAsnGlnAlaSerT	406
406 2483	GlnCysThrSerThrGlyMetProValHisMetGlnSerArgSe	392 434
2433	AGAAGGAGATGGCCAACATGAAAGAGGAGTTCGGGCGAGTCAAAGATGC	384
391	rgLysGluAspMetLeuLeuLysGlnGlyGlnMetTyrMetThrAspSer	375
2383	GATGAAGCTCTACTTCAAGATCAAGCCGCTGCTGAAGAGCGCAGAGACA	334
375	TyrPheGluSer	362
2333	GTTATCCAGTGGAACATCCGCGCCTTCATGGGGGGTCAAGAATTG	284
361		361
2283	::::: TCATGCGCATTGAGTCAAGAAGATGGTGGAGCGCAGGGACGCCCTGCT	234
361	laLeuLysSerArgPheLys	355
2233		184
ω 55	uSerLeuArqThrIle	348

		GCCAAGAATGCCTTGGCCCACGCACTGCAGTCAGCCCGGCA	G1 ye	800 ysSerAsnIleThrGluLeuLysLysGlnLeuSerGluLeuAsnLysLys :::::::::::::::::::::::::::::::::	783 uThrValPheIleProProGluArgHisGluLysGluMetMetAlaLu   ::::::::::::::::::::::::::::::::::::	767 LysLeuLeuMetGluAsnAlaSerLeuSerLysAsnValSerArgLeuG	750 ysLeuSerAspValThrHisLysTyrThrGluLysLysLeuGluMetGlu      ::::::::::::::::::::::::::::::::	736 tLysLysSerHisAspVallleValAspAspLeuAsnLysL	720 AsnLeuThrThrGluMetLysAsnValProLeuLysValSerGluGluM :::::   :::::   :::::::::::::::::::::	703 luIleGluLysValCysLeuAspAsnLysLeuLeuThrGlnGlnValAsn      :::::	686 uGlyLysArgIleThrGluLeuThrSerLysAsnGlnThrLeuGlnLysG     ::::    :::    3456 GGGCAGCAGATAGACAATCTACAGCGGGTGAAGCAGAAGCTGGAGAAAA	674 GlnLeuLysSerArgLeuGluGlnLysSer	657 luAsnLeuLysAlaLysLeuAlaGlnHisValLysProGluGluHist 	640 gGluTyrGluArgSerLeuAsnGluThrArgProLeuLysArgGluLeuG ::: ::   :::	632 AlaLysLysLeu	616LysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGlu        :::::       :::::         3236 CCAAGGTGGAGAAGCTGCGCTCAGACCTGACCCGGGAGCTGGAGGAG	599 yGlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIleProAlaG :::::::::::   ::::    3186 ACGCATCGAGGAGCTGGAGGAGGAGCTAGAGGCGGAGCGCACAGCCC	583 CysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluMetGluG :::         :::	3098 AGTTTGACATCAGTCAGCAGAACAGTAAAATAGAGGACGAGCCGCTG
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	/23 BAICCMBCICMBICMBBCCMMIMBMAIMBCCICMBABBCCCAMAA
7	35 CAMPO DO COMO DO COMO DA COMO DA COMO DO COMO DO COMO DE CO
1132	115 sGluGluLeuLysThrLysGlnAr
4724	4675 GAGGCCCTGCGGGTGAAGAAGAAGATGGAGGGCGACCTCAATGAGATGGA
1115	lnValGluSerLeuLysLysSerLeuSerGlyT
4674	4634 CCCTACAGACCTCCCTGGATGCCGAGACACGCAGCCGCAAC
1098	uIleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHisValProLeu
4633	GGAGATGGAGCAAGCCCAACCACCTGCGGGTGGTGGAC
1082	ysGluLysGluLysLeuValGluGluAsnAlaLysGlnThrSe
4583	GTTCAACCAGATCAAGGCAGAGATCGAAAGGAAGCTGGC
1065	luLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTyrT
4533	4493 CCTCCCTGGAGCATGAGGAGGGCAAGATCCTCCGAGCCCAG
1048	lHisIleGluAsnSerTyrGluThrGluArgAlaLeuSerArgLys
4492	4443 GCTGGAGGTGGAGCTGGAACTGCAGTCAGCCCTGGAGGAGGCTGAGG
1032	LeuLysLysGluIleLeuThrLeuGlnLysAspLeuLysAspLysAsn
4442	4393 CTGGGAGAAGGGGGTAAAAATGTGCACGAGCTGGAGAAGATCCGCAAACA
1015	hrSerGluGluGluAlaLysLysCysLysGlnGluAsr
4392	4343 AGCGGGAGAACAAGAACCTCCAGGAGGAGATCTCAGACCTGACTGA
998	AlaThrGluLysGluLeuLysGluGlnLeuSerGlnGlnThrGln
4342	TGGAGACCTTC
982	LeuLysTyrAlaProIleIleSerLeuGluGluCysGluArg
4295	CCCAGAAGGAGGCGCGCTCCCTGAGCACAGAGC
965	${\tt luIleAlaAlaGlnLysArgGluLeuAspThrIleGlnGluCysIle}$
4251	
948	eLeuAlaLysTyrLysLysSerGlnGluGluIleValThrLeuHisG
4201	4152 CAATGCGGCCGCCGCAGCCCTGGACAAAAAGCAGAAGGAACTTCGACAAGA
932	yLeuArgLysSerMetLysLysValGlnAspAsnSerAla
4151	4102 CACAGGCTGCAGAACGAGATCGAGGACCTGATGGTGGATGTGGAGCGCTC
915	laGluTyrIleSerLeuArgGl
898 4101	888 lulleLeuLys
4051	CTGGAGGAAGCCAAGAAGAAGCTGGCTCAGAGGCTTCAGGATGCTGAG
888	PheValLysIleLysAspGluA
4001	CCCAGTGGAGGACCAAGTATGAGACGGACGCCATACAGAGG
875	valAspValLysLysLysCysGluA
vo d	02 AGGCCAAGGCC
י ת	RSO    IlaivaThralaio  SorsorThria  AanivaThrasnarac   io
3901	:

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seq\_name: /SIDS2/gcgdata/geneseq/geneseqn/NA1996.DAT:AAT34291

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Seq_documentation_block:
ID AAT34291 standard; cDNA to mRNA; 6175 BP.
XX
AC AAT34291;
XX
Coding sequence for smooth muscle myosin he
XX
Smooth muscle; myosin heavy chain; SM1 isof
XW
Gene therapy; mouse; SM2 isoform; retroviru
KW associated adenovirus; coronary artery cath
XX
SM
SS.
XX

XX

Key 105..6023
FT CDS                                                                                                                                                                                                                                                                    alignment_scores:
    Quality:
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Percent Similarity:
                                                                                                                                                                 alignment_block:
US-09-750-590-2 x AAT34291
                                                                                                     Align seg 1/1 to: AAT34291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          associated adenovirus or animal-expression plasmid vector (such as pCXN2 or PAGE208). The vector can be used in the gene therapy treatment of arteriosclerosis, particularly for the reduction of restenosis occurring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence represents the coding sequence for the smooth muscle myosin heavy chain SM1 isoform protein. This SM1 coding sequence was isolated from a mouse embryo cDNA library using probes based on the rabbit smooth muscle myosin heavy chain SM2 isoform. This sequence is included in the gene therapy vector of the invention. The vector of the invention consists of this sequence inserted into a retrovirus, adenovirus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding smooth muscle myosin heavy chain SM1 isoform - used a vector for gene therapy for reduction of re-stenosis following coronary artery catheterisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Smooth muscle; myosin heavy chain; SM1 isoform; rabbit; arteriosclerosis; gene therapy; mouse; SM2 isoform; retrovirus; adenovirus; restenosis; associated adenovirus; coronary artery catheterisation; sclerotic artery;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 following coronary artery catheterisation for widening of
4 CysTrpPheSerCysAla.....ProLysAsnArgGlnAlaAlaAspTr 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for smooth muscle myosin heavy chain SM1.
                                                                                                                                                                                                                                                                       595.00
0.741
50.887
                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1455 C; 1856 G; 1018 T; 0 other;
                                                                                                                                                                                                                                                                          Percent
                                                                                                                                                                                                                                                                       Gaps:
Identity:
                                                                                                  to: 6175
                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matsuda
                                                                                                                                                                                                                                                                   1578
72
21.863
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2520	CATGGCCTTCCAGGCAATGTGTCGTGGCTACCT	471
207	luTyrGl	196
2470		2421
195	yсy	194
194 2420	TAlaLeuMetLeuG	189 2371
ü		
189	laAspIleAsnSerArgAspLysGlnAsnArg	178
2320	:	271
177	CysGlnLeuLeuIleAspArgGly	168
20	CCGCATCTGCCGTCAGGGCTTCCCCCAACAGGATTGTCTT	221
	rgThrProfeUValLeuAlaThrGlnMetCvsArgF	154
154 2220	GlnLeuLeuCysAspH1sGlyAlaSerValAsnAlaLysAspValAspGl	138 ?192
2191	TGAGAAGAGGTCTGGCAAGCTGGATGCATTTCTAGT	2142
w	AspAlaAlaMetAlaAspCysProSerSerII	127
	 	092
126	ThrAlaLeuHi	122
122 2091	GlnTyrAsnCysProThrGluHisValAspLeuGlnGlyAr::::	109
2041	CACTGCCCAGTGCCTCAAAGACCAA	010
108	isLeuAlaAlaLysTyrGlyHisAlaLeuCysLeuGlnLysLeuLeu	92
	GATGTGGACCGCATTGTGGGGCTGGACCAGATGGCCAAGATGACT	960
92	SerAspThrAlaGlyArgAsnAlaL	84
1959	GTGACATCACTCCTCAATGCCTCCTCTGACAAGTTTGTGGCTGACCTGT	
83	alasoTleThrThr	79
78 1909	euGlucysLeuAsnAlaIleLeuIleHisGly	860
1859	GTTCTCCATCATCCACTATGCTGGGAAGGTGGAC	823
83	gSerAlaPheHisValValAlaSerLysGlyAsnL	51
1822	TTCAGAAGCCCAAGCAGCTAAAGGACAAAAC	784
51	ysValSerSerIleLeuAlaLysLysGlyValAsnProGlyLysLe	35
1783	GAAGCTATGCTCAGAGCAGGAATCA	
4 4	cionionnonniociosiicecennocinenonemoicatoriosi eniocTurbenbenbendiolimbetbredblablaglii bredgubicatorio	
1754	TOTTO TOTTO A TABLE A TOTTO TO	705

223 2571	Asni	237 2620
237 2621	laSerGluAsnSerAs	254 2670
254 2671	roSerLeuGlnGlnArgAsnLeuSerGlnMetLe 	270
271 2721	GlnArgGluHisGlnAsnIle  -:::::::      ::::  GAGCAGAAGCACTCAGCTGGCTGA	183
284 2771	TGCTGCAGGAGCAGTTGCAGGCAGAGACAGAGCTGTAT	90
290 2821	<pre>spLeuLysGluArgLeuArgLysIleGlnGlnGluGln ::::::                                </pre>	106
307 2871	pLy9ValAsnGlyLeuGlnLeuAsnGluGluVal ::: ::::::::::::::::::::::::::::::::	911
323 2912	laAspAspLeuGluSerGluLysGluLysL 	961
340 2962	laAlaLysGluLysGlnH1sGluGlu	011
349 9012	IleGluAlaLeuLysSerArgPheLysTyrPheGluSe 3 :::     :::   :::    GTCACGGCTGAGGCCAAGATCAAGAAACTGGAGGA 3	058
365 3059	SerGlySerHisPheArg :::::    CAGAACAGTAAACTTTC <i>I</i>	108
379 3109	lnMetTyrMetThr :::    rCAGCGACTTGACAACCAACC1	90 158
391 3159	31yMetProValHisMetGlnSerArgSerMe 4 ::: :::      :TCACAAAGCTGAAGAGCAAGCATGAGTCTAT 3	07 208
407 3209	aLeuProAsnGlnAla      CTGAAGAAAGAGGAGAAG	23 258
423 3259	snGluIleLeuLysLysGluLeuGluAlaMetArgThrPheCysA             :::::       ::: TGGAGAAACTCAAGAGGAAACTGGAGGGT	39 290
440 3291	aLysGlnAspArgleuLysLeuGlnAsnGluLeuAlaHisLysVa 4	56 328
456 1329	aGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAsp. 4 	72 378
473 3379	PrAspGluGlnIleLysGlnLeuGluAsp 4	82 428

742	727 AsnValProLeuLvsValSerGluGluMetIvsIvsSerHisAsnVal	
726 4205	710 spAsnLysLeuLeuThrGlnGlnValAsnAsnLeuThrThrGluMetLys	4
710 4161	uThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysValCysLeuA   :::::::::::::       :::	
693 4126	lyLysargIleThrGluLe :: :::::: CTACCAAGCTGCGTCAGTT	
676 4079		
660 4044	643 uArgSerLeuAsnGluThrArgProLeuLysArgGluLeuGluAsnLeuL	_
643 4016		
626 3986	610 euSerIleProAlaGluLysPheGluAsnMetLysSerLeuLeuSerAsn (	
610 3936	601 uLysAspLeuSerAlaLysLeuAla	
601 3886	585 LeuGluArgGluLysArgGlyArgLysLeuThrGluMetGluGlyGlnLe	
584 3845	578 ysGluLeuSerMetCysGlu	
578 3795	-	
561 3745	549 ArgAsnGln	
548 3695	540GlyAlaSerAlaGluValGlyLysLeu ::: ::   :::    3646 AGGCCCTGGATGAGGACACGCGGTCCCATGAGGCCCAGGTCCCAGGAGATG	
539 3645	532LysaspMetLysValLysTyrGlu	
531 3595	521HisargLeuMetGluGluLeuLysaspGlnLeu	
520 3545	516 laalaThrGlyAsn	
516 3495	499 sGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuThrSerAspA :::::::::::    :::    :::           :::    3446 CGAGCTAGAGGGCCATATCTCAGACCTAGAGGGACCTAGACTCAGAGC	
499 3445	483 AlaLeuLysAspValGlnLysArgMetTyrGluSerGluGlyLysValLy	

1026	1010 LysGlnGluAsnAspLysLeuLysLysGluIleLeuThrLeuGlnLysAs
4937	4888 AGCGGCAGCTGCACGAGTATGAGACAGAACTGGAAGATGAACGGAAGCAG
1009	lnG
993 4887	979 gLysPheLysAlaThrGluLysGluLeuLysGluGlnLeuS
979 4837	967 LysTyrAlaProIleIleSerLeuGluGluCysGluAr
966 4787	951 laAlaGlnLysArgGluLeuAspThrIleGlnGluCysIleLysLeu :::    ::
951 4737	934 aLysTyrLysLysSerGlnGluGluIleValThrLeuHisGluGluIleA :::     ::::
934 4694	LysValGlnAspAsnSer          GATGTAGGCAAGAACGTG
917 4649	901 allysalaGluTyrIleSerLeuArgGluHisGluGluLysMetSerGly ::         4630 TCAAAGCTGAGATGGAAGAC
901 4629	884 sAspGluAsnGluIleLeuLysArgAsnLeuGluAsnThrGlnAsnGlnV:::
884 4579	868 AspValLysLysLysCysGluAspIleAsnGlnGluPheValLysIleLy ::::::::::
867 4532	> ~
851 4508	834 uLysTysThrMetSerHisGlnTyrValProValLysThrHisGluGluI:::   :::    :::   ::: 4482 .GAGAAGAACATCTCCTCCAAGTATGCG
834 4481	818 GlyGluAspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAspLe
8:17 4451	uLeuLysI : ::: CCAGCGG
801 4404	LysGluMetMetAlaLeuLysS :::   ::: CAGGAGCTGGATGACCTGGTCG
784 4379	768 LeuLeuMetGluAsnAlaSerLeuSerLysAsnValSerArgLeuGluTh    :::   ::: 4356CTGGAGAAAACCAAGAACAGGCTC
767 4355	751 euSerAspValThrHisLysTyrThrGluLysLysLeuGluMetGluLys ::::: ::::::::::::::::
751 4305	743LeuAsnLysLysL ::::::::::::::::::::::::::::::::
4255	4206 ACACTGAACATTCAGCTCTCAGACTCTAAGAAGAAGCTGCAGGACTTTGC

1299 5797	1286 LeuGlnArgArgIleGlnGluSerAlaLysGlnIleGluAl     :::   ::::    :::      :::    :::    :::	
1285 5747	1270 ysaspGlnGlnGluArgCysaspLysSerLeuThrThrIleThrGlu::::   :::   :::   :::    :::    :::	
1270 5697	1256 pGluLys	
1256 5647	luValLeuHisAlaLysLysLysGluLeuSerAlaLysAs	
1239 5618	1223 leSeraspLeuAsnGluLysLeuAlaAsnLeuAsnArgLysTyrGluGlu	
1223 5571	1206 lValAspLeuSerLysTyrLysAlaThrLysSerAspLeuGluThrGlnI :::	
1206 5531	1190 GluIleGlnAsnThrLysGlnAlaLeuLysLysLeuGluThrArgGluVa::::::   :::::::    ::::    ::::     ::::	•
1189	1173 ysGluGluGluSerGlnAsnLysThrGluGluValSerLysLeuGlnSer: ::   :::     :::   ::::     :::    5452 ATGAGAGCGCACGGCAACAGCTGGAGCGCCAGAACAAGGAACTGCGAAGC	
1173 5451	56 sGluAlaPheGluLysGluValGlyIleIleLysAlaSerLeuArgGluL     ::::::::::::::::::::::::::::::::::	
1156 5401	1144 AsnSerSerValProLeuAlaGluHisLeuGlnValLy	
1143 5351	1127 ysGluGlnGlnThrValThrGlnLeuArgGlnMetLeuGluAsnGlnLys l :::	
1127 5306		
1110 5275	1097 LeuGluGlnValGluSerLeuLysLysSerLeuSerGlyTh 1	
1096 5225	1080 hrSerGluIleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHisValPro 1 :::	
1080 5178	1067LysGluLysGluLysLeuValGluGluAsnAlaLysGlnT 1 ::::::         :::   ::  5129 AAAAGAGAATGAGAAAAAGCCAAGAGTCTGGAGGCAGACCTCATGCAGC 5	
1066 5128	Ω ·	
1059 5078	1043 laLeuSerArgLysThrGluGluLeuAsnArgGlnLeuLysAspLeuLeu 1 ::::::::::::::::::::::::::::::::::::	
1043 5028	us ⊢	
4978	4938 AGAGCTCTGGCGGCGGCAGCTAAGAAGAAGCTGGAAGGGGA 4	

5898	1328	5848	1312	5798	1299
5898 AACGAGGCTTCATTTGTTCCTTCCAGAAGG 5927	:	5848 AGGCCATGGGCCGTGAGGTGAACGCCCTCAAGAGCAAACTCAGGAGAGGA 5897	1312 luArgLeuLysGlnAlaLeuAsnGlyLeuSerGlnLeuThrTyrGly 1327	5798 CAACCGCAGGAAGCTGCAGCGGGAGCTAGATGAGGCCCACAGAGAGCAATG 5847	1299 aLysAspAsnLysIleThrGluLeuLeuAsnAspVal
		5897	1327	5847	1312

4

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Search information block:
Query: US-09-750-590-2
Query length: 1401
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Database sequences: 351203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database sequences: 351203
Database length: 113238999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search time (sec): 61.300000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM of: US-09-750-590-2 to: Issued_Patents_NA:*
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-DB-Issued_Patents_NA -QFMT=fastap -SUFFIX_std.rni
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-THR_SCORE-pct -THR_MAX-100 -THR_MIN=0 -ALIGN-15 -MODE-LOCAL
-OUTFMT-pfs -NORM-ext -HEAPSIZE-500 -MINLEN-0 -MAXLEN-200000000
-USER-US09750590_@CGN1_192 -NOFU-6 -ICDU-3 -LONGLIG
-USER-US09750590_@CGN1_192 -NOFU-6 -ICDU-3 -LONGLIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Results were produced by the GenCore software, Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     out_format : pfs
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514.00 816
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-3 + 512.00
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ORGANISM: HUM
US-08-353-700-2
                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                  Percent Similarity:
                      263 nLeuSerGlnMetLeuAspGluValAsnThrLysSerAsnGlnArgGluH 280
                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL:
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
 GCTTGAAGGACAGCTTGACAAACTGAAGGAAAAGCAGCAAAGGCAGT
                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                Ratio:
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alignment_block:
US-09-750-590-2 x US-08-353-700-2
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; Sequence 2, Applicatio
; Patent No. 5599919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: US-08-353-700-2
                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (215) 563-4044
INFORMATION FOR SEQ ID NO: 2:
251 GluLeuTrpLysLysGly.......ProSerLeuGlnGln...ArgAs
                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: REED, JANET E.
REGISTRATION NUMBER: 36,252
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 563-4100
                                                                                                                                                                                                                                                                                           TOPOLOCIO CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: YEN, TIMOTHY J.
APPLICANT: RATTNER, JEROME B.
TITLE OF INVENTION: CLIEIC ACID ENCODING
TITLE OF INVENTION: TRANSIENTLY-EXPRESSED
TITLE OF INVENTION: AND METHODS OF USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/0 FILING DATE: 09-DEC-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1601 MARKES CITY: PHILADELPHIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: DANN, DORFMAN, STREET: 1601 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-353-700-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION
                                                                                                                                                                                                                                                                                                                                                         nucleic acid
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19103-2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/08353700
                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                        561.00
0.758
47.224
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                                                                                                                                                                                                                                                                                                                                           double
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Percent Identity:
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ET, SUITE
                                                            from: 1 to: 10136
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KINETOCHORE PROTEIN
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.6e-19
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.AsnIleGlnAspLeuGluIle 288

478	473SerAspGluGlnIleLys	4
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472	laLeuGluCysGluArgValLysGluAsp	4
1120	71 CTGCAAGGACATGAAAAAGAAATGAAAGGCCAAGTGAATAAGTT	107
461		
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459	ysLeuGlnAsnGluLeuAlaHlsLys	4
1020	- 	97
447	44Aspl	-
970	:::     :::     :::     :::     :::    :::    :::    :::    :::    :::    :::    :::    :::    :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   ::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::	92
443	30 GluLeuGluAlaMetArgThrPheCysAspSerAlaLysGln.	A 13
920	86 GAGATITCTCTGCATCTTACTTTTCTGGGGAACTA	9.8
429	euProAsnGlnAlaSerTyrSerGluAsnGluIleLeu	41
885	CATCTTTCATCTAATTCTCAAAGAACTCCAATTA	83
413	7 .GlyMetProValHisMetGl	39
835	6 GACATTGCCCGGCATCAGGCTTCATCATCTGTGTTCTCATGGCAGCAAGA	78
396	0 AspSerGlnCysThrSerThr	39
785	36 AGGCTAAAAAAGCAAGCCAGACTCTTCCACAAGCCACCATGAATCACCGC	73
389	5ArgLysGluAspMetLeuLeuLysGlnGlyGlnMetTyrMetThr	37
735	86 TAAAGAGGTTGAAGAACGAAAAAGATTAGAGGCAGAGGTTAAAAGCCTTGC	68
374	74	37
685	36 AGTCAATATTATAGTGGTTCCAAGTATGAAGATCTAAAAGAAAAATATAA	63
374	66 AspHisLeuGlySerGlySerHisPhe	36
635	B6 TGAATCCATGCAATACACCACAAAAAATTTTTACAACTCCACTAACACCA	æ
365	53 leGluAlaLeuLysSerArgPheLysTyrPheGluSer	Ċn
585		ū
353	36 sSerLeuLeuAlaAlaLysGluLysGlnHisGluGluSerLeuArgThrI	33
535	86 TCAGGCAAAAACAAATAGAAAAACTGGAACAGGAACTTAAAAGGTGTAA	48
336	20 GluGluValMetValAlaAspAspLeuGluSerGluLysGluLysLeuLy	32
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435	91GluAspLeuLysGluArgLeuArgLysTleGInGInG	3 29
280	36 GAAAATGAAAAACCGAGGGTACAAACCTGAAAAGGGAGAATCAAAGATT	33
290	89 GluAsn	8
335		

693 2069	erGlyGluLeuGlyLysArgIleThrGluLeu :::	683 2020
683 2019	SValLysProGluGluH1sGluGlnLeuLysSerArgLeuGluGlnLysS::::    :::   :::   :::	666 1979
666 1978	LysLeuAlaGlnHi	662 1929
661 1928	erLeuAsnGluThrArgProLeuLysArgGluLeuGluAsnLeuLysAla    ::: 	645 1879
645 1878	nGluLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgS	629 1830
629 1829	ProAlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAs ::::::        :::::AATCAGCAAGAAAACTCCTTGACTTTA	613 1803
612 1802	luMetGluGlyGlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIle :::::    :::   :::     ::: CTCAGGAAACCATGTTAAGAGATCTTCAAGAAAAATA	596 1765
596 1764	TTTAAATCAGAGCCAGAATTTTGCAGAAGAAATGAAAGCGAAGAATACCT	592 1715
591 171 <b>4</b>	GluLeuSerMetCysGluLeuGluArgGluLysArgGly	579 1665
578 1664	heLysArgAspGluGlyLysLeuMetGluGluAsnLysArgLeuGlnLys::   ::::::::	562 1621
562 1620	SLEUARGASNGINTIELYSGINASNGIUMEtLEUVAIGIUGIUP::::        ::: CCAGGCGAGTCAGATCAAGGAGAATGAGCTGAGGAGAAGCATGGAGGAAA	547 1571
547 1570	GlyAlaSerAlaGluValGlyLy ::: ACAATTTGGAAGAGTTTAAGCAAAAGTTGTGCAGAGCTGAACAGGCGTT	540 1521
539 1520	euMetGluGluLeuLysAspGlnLeuLysAspMetLysValLysTyrGlu:::::::           ::::          :::             :::	523 1471
523 1470	uLysGluHisLeuThrSerAspAlaAlaThrGlyAsnHisArgL:    :::       ::::        :::        :::         :::	508 1421
508 1420	AT:	506 1371
505 1370	GluGlyLysValLysGlnMetGlnThrHisPhe	495 1321
494 1320	1	487 1271
487 1270	GACCAGGCGTCAACCAAGTATACTGCATTGGAACAAAAACTGAAAAAATT	479 1221
1220	AAGTTTTGAACAAATGTAGGGATGAACTAGTGAGAACAACAGCACAATAC	1171

694 2070	CysLeuAs    :: TTGGA	710 2113
710 2114	Ç :	720 2163
721 2164	ProLeuLysValSerGluGluMet    :::       ::: AACCTAAGTGTCGAGATC	736 2207
737 2208	LysI III AAG	753 2245
753 2246	LysTyrThrGluLysLysLeuGluMetGluLysLeuLeuM 	770 2280
770 2281	ysAsnValSerArgLeuGluThrValPhe	786 2300
787 2301	euLysSe     ::  GAAGAC	801 2344
801 2345	uSerGluL  :::   TCAGTTAC	813 2394
813 2395	GCATGCC	820 . 2444
821 2445	erLeuMe      :: CTCTGGT	828 2494
828 2495	LysLysT ::: CAGCCTG	837 2544
837 2545	isGlnTyrValPro    ::::: 	844 2594
845 2595	H1sGlu	849 2644
850 2645	GluileLGluileLGluileL	852 2694
852 2695	aLeuSerSerThrLeuAspLysThrAsnArgGluLeuValAsp ::::::       :::   GATGAACTCAGACCTGCAAAAGCAGTGTGAAGAGTTGGTGCAA	868 2744
869 2745	LysLysCysGluAspIleAsnGl     :::   ::::::   naATCTCATGAAAGCAGAACAGATGCATCA	878 2794
878 2795	LysIleLysAspGluAsnGluIleLeuLysArgAsnLeuG	895 2838
95	luAsnThrGlnAsnGlnValLysAlaGluTyrIleSerLeuArg (	909

ъ .	AlaPheGluLy	157
1156 3767	snGlnLysAsnSerSerValProLeuAlaGluHisLeuGlnValLys ::::::   ::: GTGAGAGAAATCAATGTAATTTTAAACCTCAGATGGATCTTGAACTTAAA	1141 3718
1141 3717	ThrGlnLeuArgGlnMetLeuGluA 	112 <b>4</b> 3668
1124 3667	TTACAAGAGAATGAACAGCTGATGAAGGTAATGAAGACTAAACATGAATG	1118 3618
1117 3617	luThrLeuLysGluGlu	1112 . 3568
3567	TAACCAAAACAATTCTAAGAGCGAGGCTGGTGGTTTAAAGCAAGAAATCA	3518
1106 3517		1094 3468
1093 3467	G D	1081 3418
1081 3417	S S	1064 3368
1064 3367	•	1052 3318
1051 3317	luasnSerTyrGluThrGluargalaLeuSerArgLysThrGluGluLeu    :::      	1035 3270
1035 3269	SGluIleLeuThrLeuGlnLysAspLeuLysAspLysAsnValH1sIleG:	1018 3230
1018 3229	SerGluGluGluAlaLysLysCysLysGlnGluAsnAspLysLeuLysLy :::   :::    ::: :::   :::    :: ATAGATGAAAGGGAGAAAAGCATTTCAGAGTTATCTGATCAGTACAAGCA	1002 3180
1001 3179	ysGluLeuLysGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThr:::::	986 3130
986 3129	aProllelleSerLeuGluGluCysGluArgLysPheLysAlaThrGluL::::::::::::::::::::::::::::::::::::	969 3080
969 3079	GlnLysargGluLeuaspThrIleGlnGluCysIleLysLeuLysTyrAl:::   ::   :::   :::   :::   :::   :::	953 3030
952 3029		941 2980
940 2979	nAspasnSerAlaGluIleLeuAlaLysTyrLysLysSerGln: :::::::           :::	926 2933
926 2932	GluHisGluGluLysMetSerGlyLeuArgLysSerMetLysLysValGl    :::::      	910 2889

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1365
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AlaLeuLeuGlnIleIleGln.....MetArgGlnGlyLeuValCysSe 1400
                                                                                                                                                                                                                                                      alleTyrArgThrHisLeuLeuSerAlaAlaGlnGlyHisMetAsp.... 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ysArgGlnSerGlnLeu...IleAspSerLeuGlnGlnGlnValArgSer 1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aLysAspAsnLysIleThrGluLeuLeuAsnAspValGluArgLeuLysG 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IleThrGluLeuGlnArgArgIleGlnGluSerAlaLysGlnIleGluAl 1299
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|||||| ::: |||::::|| |||:::|||:::||
CTGAAT...GAGCTAGAGAAAATAFGT...GAAATACTGCAGGCTGAAAA 4111
                                                                                          TAAAGGCCGAAAATTTGGTCTTGTCAACGAATCTGAGAAACTTTCAAGGT
                                                                                                                                                                                                                                                                                                                                                                              LeuGlnGlnGeuAlaAspAlaAspArgGlnHisGlnGluValIleAl 1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATACCAGGAGGTGAATTTGGTGAACAACCAAATGAACAGCACCCTGTGTC 4309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATATTAAATGATGACAGTGGTCTTCTCCATGGTGAGTTAGTGGAAGAC 4259
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                                                                                                                                                                                                      .....AGCTCTAAAATGTCAGAGCTGCAGACCTATGTTGACTCAT
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                                                                                                                                          .....GluAspValGlnAla 1385
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alignment_block:
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; ANTI-SENSE:
PCT-US95-16216-2
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                                                                                                                                                                                                                                                                                                          Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                         Align seg 1/1 to: PCT-US95-16216-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application PC/TUS9516216 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/353
APPLICATION UNDER: US 08/353
FILING DATE: 09-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Reed, Janet E.
REGISTRATION NUMBER: 36,252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Yen, Timothy J.
APPLICANT: Rattner, Jerome B.
TITLE OF INVENTION: Nucleic Aci
TITLE OF INVENTION: Expressed I
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 563-4100
TELEPAX: (215) 563-4044
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4595 C 4595
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
  280 isGln.....
                                         236 GCTTGAAGGACAGCTTGACAAACTGAAGAAGGAAAAGCAGCAAAGGCAGT
                                                                           263 nLeuSerGinMetLeuAspGluValAsnThrLysSerAsnGlnArgGluH 280
                                                                                                                                                             251 GluLeuTrpLysLysGly......ProSerLeuGlnGln...ArgAs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: PCT/US95/16216 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 1601 Market
CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                         GAAGAATGGAAAGAAGGCCTGCCTACAAGAACTCTTCAGAAAATTCAAGA
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1601 Market Street Suite 720
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                                                                                                                                                                                                         from: 1 to: 10136
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Protein, and
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1220	 	171
478	SerAspGluGlnIleLys	473
1170	:::    ::: GCAAAAGTGGAATTAATTGAAAAAGAGA	121
472	LuCysGluArgValLysGluAsp	461
1120	.;; AGGACATGAAAAAGAAATGAAAGGCCCAAGTGAATAAGTTTCAAGA	071
461	LysAl	460
1070		1021
. 0	SCASTITETTIGGAATTCTAGCAGTCCTCATCTTTTGGATCAATTAA	447
47	CANTENTAGE AND	444
970·		921
443	luLeuGluAlaMetArgThrPheCysAspSerAlaLysGln	430
429 920	<pre>snGlnAlaSerTyrSerGluAsnGluIleLeuLysLys :::          ::::::   :::TCTGCATCTTACTTTTCTGGGGAACTA</pre>	886
885	CCCCAAGTCATCTTCATCTAATTCTCAAAGAACTCCAATTAGGA	836
413	rgProLeuGluL	9
835	TGCCCGGCATCAGGCTTCATCATCTGTGTTCTCATGGCAGCAAGA	786
396	SerGlnCysThrSerThr	390
785	MeCTYTMeCTNT     ATGAATCACCGC	ω.
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374 685	ASPHISHERGIYSETGIYSETHISPHE	636
635	TGARTCCATGCAATACACCACAAAAAATTTTTACAACTCCACTAACACCA	2 6 6
365	leGluAlaLeuLysSerArgPheLysTyrPheGluSer	353
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353	sSerLeuLeuAlaAlaLysGluLysGlnHis	336
336 535	GluGluValMetValAlaAspAspLeuGluSerGluLysGluLysLeuLy :::	320 486
485	AACTTCAAGTCAAGGAGTCACAAGTGAATTT	436
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335	5 TTCAGCTTGACAGTCTCGAGGCTGCGCCGCAGAAGCAAACACAGAAGGTT	286

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540 1521 547	laSerAlaGluValGlyLy ::        ::: GCAGAGCTGAACAGGCGTT	547 1570
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579 1665		591 1714
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613 1803	LeuAs	629 1829
629 1830	nGluLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgS 6	645 1878
645 1879	erLeuAsnGluThrArgProLeuLysArgGluLeuGluAsnLeuLysAla 6    :::	928
662 1929	LysLeu	978
666 1979	SValLysProGluGluHisGluGlnLeuLysSerArgLeuGluGlnLysS 6 ::::   :::   :::        GTTAAAAAAGAAAGAATATGAAGAATTGAAA	683 2019
683 2020	erGlyGluLeuGlyLysArgIleThrGluLeu 6 ::	693

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878 2794	11e	A 6
868 2744	laleuSerSerThrLeuAsplysThrAsnArgGluJeuValA 	ம் ப
852 2694	GAGTO	73 A
849 2644	1LysThrH1sG1u	845 2595
844 2594	MetSerHisGlnTyr	as tu
837 2544	rGluAsnAsnAspLeuLysl	9 2
828 2494	GlnGluLysIleTyrSerLeuM 	821 2445
820 2444	SnLysLysCysGlyGluAsp 	9 1
813 2394	SerGluL  :::   CAGTTAC	801 2345
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786 2300	tGluAsnAlaSerLeuSerLysAsnValSerArgLeuGluThrValPhe ::::::   ::::    GCAGAAAGCTGAGTTCTCAGCAGAAAGCTGAGTTCTCA	770 2281
770 2280	hrHisLysTyrThrGluLysLysLeuGluMetGluLysLeuLeuM 	753 2246
753 2245	THISASPVallleValAspAspLeuAsnLysLysLeuSerAs	737 2208
736 2207	LeuThrThrGluMetLysAsnValProLeuLysValSerGluGluMet 	721 2164
720 2163	LysLeuLeuThrGlnGlnYalasnAsn	710 2114
2113		

e 1169	57 GluAlaPheGluLysGluValGlyIleIleLysAl
	1141 snGlnLysAsnSerSerValProLeuAlaGluHisLeuGlnValLys ;;;;;;   ;;; 3718 GTGAGAGAATCAATGTAATTTTAAACCTCAGATGGATCTTGAAGTTAAA
	1124 STYFGluLySGluGlnGlnThrValThrGlnLeuArgGlnMetLeuGluA
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- 47	1107
1106	1094 HisValProLeuGluGlnValGluSerLeuLysLysSer:
	1081 erGluIleLeuAlaAlaGlnThrLeuLeuGlnLysGln ::   :::   :::
	1064 uAlaLysLysGluLysGluLysLeuValGluGluAsnAlaLysGlnThrS :    :::      :::
	1052 AsnArgGlnLeuLysAspLeuLeuGlnLysTyrThrGl 
1051	1035 luAsnSerTyrGluThrGluArgAlaLeuSerArgLysThrGluGluLeu 
	1018 sGluIleLeuThrLeuGlnLysAspLeuLysAspLysAsnValHisIleG
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	986 ysGluLeuLysGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThr :::::
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969 307	953 GlnLysArgGluLeuAspThrIleGlnGluCysIleLysLeuLysTyrAl:::   :::    ::: 3030 GAGAAGAAATGAGTTCCATCATTTCTTTAAATAAAAGGGAAATTGA
ωω	941GluGluIleValThrLeuHisGluGluIleAlaAla ::::   :::
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33 ASPVALGULLYSVALSETSETLELBUAlaLySLYSGLYVALASNPr 48 33:31:3      :::	GluAspValGlnAla
eg 1/1 to: US-08-328-254-5 from: 1 to: 8789	4455AGCTCTAAAATGTCAGAGCTGCAGACCTATGTTGACTCAT 4494
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0.667 Gáps: 49.846 Percent Identity: 21	
alignment_scores: Quality: 540.00 Length: 1623	
; NAME/KEY: CDS ; LOCATION: 5447990 US-08-328-254-5	1328 rGlySerProSerL 1333
MOLECULE TYPE: DNA (genomic) ; FEATURE:	
STRANGEDNESS: single	
SEQUENCE CHARACTERISTICS: LENGTH: 8789 base pairs TYPE: niclaid and	1327
; TELEFAX: (619) 535-8949 ; INFORMATION FOR SEO ID NO: 5:	Inalalonaend uloncomolalonendiA
ATION INFORMATION: (619) 535-9001	auysmspasnuysilernrGlüLeüleülssnAspValGlüArgLeüLysG 
: NAME: Campbell, Cathryn A. : REGISTRATION NUMBER: 31,815 : REFERENCE/DOCKET NUMBER: 5-CT 1191	
ATIO NU	4128GACCTGAATGATTCAAGGTCAGAATGT
; FILING DATE: 24-OCT-1994 ; CLASSIFICATION: 435	1266 luGlnGluIleLysAspGlnGlnGluArgCysAspLysSerLeuThrThr 1282
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OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1 0 Version #1 25	1249 sLysGluLeuSerAlaLysAspGluLysGluLeuLeuHisPheSerIleG 1266
COMPUTER KANDABLE FORM: COMPUTER: IBM PC compatible	
; COUNTRY: USA ; ZIP: 92122	
1,129	LEVE TEVERAPPLeuABRGluLySLeuAlaAsn 1232    I
: Campbell and Flores	
ROFS	3068 CATCCCCASCASING SILE SILE SILE SILE SILE SILE SILE SILE
3 6	1198 LeuLysLysLeuGluThrArgGluValValAspLeu
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4595 C 4595	3818 GCTAAGAAATAAGGAATTAAAACTTCAGGAAAGTGAGAAGGAGGAAGGA
1400 r 1400	1169 rLeuArgGluLysGluGluGluSerGlnAsnLysThrGluGluValSerL 1186
	3768 GAAATTTCTCTAGATAGTTATAATGCGCAGTTGGTGCAATTAGAAGCTAT 3817

324	euAspLysValAsnGlyLeuGlnLeuGlnLeuAsnGluGluValMetVal	308
308 3430	uAspLeuLysGluArgLeuArgLysIle	291 3384
291 3383	AsnGlnArgGluHisGlnAsn :::::: CTCGAGAAGCTAGAAGAGAAA	276 3334
275 3333	GlnMetLeuAspGluValA :::	266 3284
265 3283	oSerLeuglnGlnArgAsnLeuSer	257 3235
257 3234	ThralaSerGluAsnSerAsnLySGlyArgGluLeuTrpLySLySGlyPr :::::	241 3190
240 3189	AGAAGGG	228 3140
228 3139	TyrAlaA     TACAGAG	211 3093
211 3092	luvalLeuIleLysAsnGlyAl:: CATCCTCTTGTGTGCC	195 3049
194 3048	rgAspLysGlnAsnArgThrAlaLeuMetLeuGly 	180 3001
3000		3000
180	gProThrIleCysGlnLeuLeuIleAspArgGlyAlaAspI	163
163 3000	ProLeuValLeuAlaThrGl          ::    GTTGACTCATTAAAGGCCGAAAATTTGGTCTTGTCAACG	155 2953
154 2952	LeuLeuCysAspHisGlyAlaSerValAsnAlaLysAspValAspGly 1 :::	139 2903
138 2902	uHisaspalaalametalaaspCysProSerSerIleGln	125 2853
125 2852	H1sValAspLeuGlnGlyArgTh     :::    ::: :::  CACTTGACATTGTCAGACAAAGAAGT	110 2806
109	HisAlaLeuCysLeuGlnLysLeuLeuGln 1	99 2756
)9 2755	AGTTAGTGGAAGAC	89 2707
19 2706	hrThrSerAspThrAlaGlyAr 8 :::::   ::: !AAATGATGACAGT 2	75 ?665
	ACTAGGAAAATGGCAGAAGAGGTA	626

JLeuGlnLysGluLeuSerMetCysGluLeu 585     :::::::    :::  TTAAGTGAAAAATTGGAATATTTTCTTGT 4200	euMetGluGluAsnLysArgLeuGlnLysGluLeuSerMetCysGluL    :::    :::    ::::::   ::: TTAAGAAAGAAAACTCAGATTTAAGTGAAAAATTGGAATATTTTTCTT	569 4151	
GluPheLysArgAspGluGlyLysL 569    :::::::::    :::   GATAGAATTGGAAAAAATAGTTGGGGAAC 4150	nGluMetLeuValGluGluP	555 4101	
AlaGluvalGlyLysLeuArgAsnGlnIleLysGlnAs 555TCAAAACTCCATTTACAGGAGGTACAACT 4100	GluGlyAlaSerAlaGluValGlyLysLe	539 4072	
gLeuMetGluGluLeuLysAspGlnLeuLysAspMetLysValLysTyr 538   :::   :::   :::::   ::::: ;AAAAGTTGAAATTGAAATGAAATGAAAGAATTAGAC 4071	rgLeuMetGluGluLeuLysAspGlnLeu 	522 4031	
eLeuAlaLeuLysGluHisLeuThrSerAspAlaAlaThrGlyAsnHisA 522 	eLeuAlaLeuLysGluHisLeuThrSerA 	505 3996	
LysArgMetTyrGluSerGluGlyLysValLysGlnMetGlnThrHisPh 505 ::: :::::::::::::::::::::::::::::::	LysargMetTyrGluSerGluGlyLysVa :::: GAAGATATCCATAATCTTCAACTGCGGGT	489 3946	
LeuLysAspValGln 488	1uAspAlaLeuLysAspVal	481 3896	
GluargValLysGluaspSerAspGluGlnIleLysGlnLeuG 481	GluArgValLysGluAspSerA	467 3846	
GGAACAGTCCCCAGATACCAATTATGAGCC 3845	AlaLeuGluCys	463 3796	
lnasnGluLeuAlaHisLysValAlaGluCysLysAlaLeu 462 ::	ysLeuGlnAsnGluLeuAlaHisLysVali::   :::   ::: ATCTAGACATTGAGAAATA	447 3755	
PhecysaspSeralaLysGlnAspArgLeuL 447 :::     :::    :::    :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::  ::: :::  ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::: ::::	PheCysAspSe	437 3705	
AACACC	AsnGluIleLeuLysLysGluLeuGluAlaMetArgThr :::	424 3655	
aSerTyrSerGlu 4 :::  } AATGAG 3	euArgProLeuGluLeuAlaLeuProAsnGlnAl 	408 3614	
rGlyMetProValH1sMetGlnSerArgSerMetL 408 ::: :::::          ::: CTGGACTTAAGTTCTCGGTCTTTGC 3613	rGlnCysThrSerThrGlyMetProValHi	391 3589	
ACAAGGT	CTCCAGCTACAAGGI	3574	
uLysGlnGlyGlnMetTyrMetThrAspSe 391	ArgLysGluAspMetLeuLeuLysGlnGlyGl	375	
	:	3573	
SerAspHisLeuGlySerGlySerHisPhe 374	erArgPheLysTyrPheGluSerAspHisl	358	
<pre>userLeuArgThrIleGluAlaLeuLysS 358 :: vacTGTCACTTGAGCTGGAAGTAGCACGA. 3573</pre>	aLysGluLysGlnH1sGluGluSerLeuArgThrIleGluAl  ::::::         ::: AGAAAAGAAACAGACGGAACACTGTCACTTGAGCTGGAAGT	341 3525	
iLysGluLysLeuLysSerLeuLeuAlaAl 341 	AlaaspaspLeuGluSerGluLysGluLysLeuLysSerLeuLeuAlaal 	325 3478	
:	${\tt TTGACTGCCTTAGGAAGCAGTATTTGTCAGAAAATGAACAGTGGCAA.}$	3431	

4201	GATCACCAGGAGTTACTCCAGAGAGTAGAAACTTCTGAAGGCCTCAATTC 4	1250
602 4251	SASPLEUSETAlaLYSLEUAlaLeuSerIleProAlaGluLySPheGluA 6 :       ::: ::	519 1300
619	snMetLysSerLeuLeuSe    ::: ATGTGGCC	534 1335
635 \$336	LeulleaspValGluargGluTyrGluargSerLeuasno	551 1385
651 1386	aGlnHis	668 1422
899	sProGluGluHisGluGlnLeuLysSerArgLeuGluGlnLysSerGly	8
685	uLeuGlyLysArgIleThrGluLeuThrSerLysAsnGlnThrLeuG	01
1459		4
701 476	nLysGluIleGluLysValCysLeuAspAsnLysLeuLeuThrG 7	16 519
716	. 7	31
732	ValSerGluGluMetLysLysSerHisAspValI1 7	w
570	4	808
743	TyrThrG 7	60 657
760	sLeuGluMetGluLysLeuLeuMetGluAsnAlaSerLeuSer 7	76
	GTGAAGGAAAAGACGGAACTCCTTCAGACTTTGTCC 4	707
777	LysasnValSerArgLeuGluThrValPheIleProProGluArgHis7 ::::::     :::     TCTGATGTGAGTGAGCTGTTAAAAGACAAAACTCATCT 4	92 745
793 746	SGluMetMetAlaLeuLysSerA 8  ::: :::      :::	705
802		15
815		15
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816	LysC 8	17
96	TGAAAAGCTGAATGTCTCCAAGGCCTTGGAGGCCGCACTGGTGGAGA 4	945
946	ysGlyGluAspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAsp 8:	33 995

5046 867 5096 877 5146 888 5196 903 5246 917 5296 932 5328 939 5378 939 5378 939 5378 939 5378 939 5378 939 5378		867 5095 8076 5145 887 5195 903 5245 916 5225 931 5327 939 939 5327 939 931 5327 939 5327 939 5327 939 5327 939 5327 939 5327 939 5327 939 5327 939 5327 936 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 938 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 935 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327 5327
	GAATTGCAGATGTCA	31 32 33 33 33 33 33 33 33 33 33 33 33 33
328 328 939 956	CAAGCAGAGATACAGATCAAAGAAGAAACT  LUSS  GAACTAGACAAGTTACTCTCTCTCATTTAAAAGTCTGTTAGAAGAAAAGG  rGlnGluGluIleValThrLeuHlsGluGluIleAlaAlaGlnLysArg	1339 1377 155 1415
416 972 466	AGTGGAGATGCTTCAGAATCAGTTAAAĞGAGCTAAATGAGGCAGTAGC 5 erLeuGluGluCysGluArgLysPheLysAlaThrGluLysGluLeuL 9 ::    ::    CCTTGTGTGGGGACCAAGAAATTATGAAGGCCACAGAACAGAGTCTAG 5	89 515
989 516 004	sGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGlu	003 565
004 566 005 616	GluGl 1 ::::: CAACA 5 cLeuT 1 : GGAGA 5	005 615 022 665
66 22	InLysAspLeu	031 715
1032   5716 ( 1048   5766	ValHisIleGluAsnSerTyrGluThrGluArgAlaLeuSerArgLySTh 1 ::::::	.765 065 815
1065 1 5816 T 1082 G	aLysLysGluLysGluLysLeuValGluGluAsnAlaLysGlnThrSer 1	081 865

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6007
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1091 nLysGlnH1sValProLeuGluGlnValGluSerLeuLysLysSerLeuS 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1236 ysTyrCluCluValCysCluCluValLeuHisAlaLysLysLysCluLeu 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlnValLysGluAlaPheGluLysGluValGlyIleIleLysAlaSerLe 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nThrValThr......GlnLeuArgG 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAAAAGAG......CAAGAGAAAGTACAGATGAAAGAAAAATCA...A 5956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ArgGluValValAspLeuSerLysTyrLysAlaThrLysSerAspLeuGl 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            euGlnSerGluIleGlnAsnThrLysGlnAlaLeuLysLysLeuGluThr 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTAGTAGTCAAGTAGAGTGTCTTGAACTTGAGAAGGCTCAGTTGCTAC
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                                                                                                                                                                                                     nLysIleThr...GluLeuLeuAsnAspValGluArgLeuLysGlnAlaL 1318
                                                                                                                                                                                                                                                                                                                                                  TAAACAAAATGACTGCAAAAGGAAACTGAGCTGCAGAGGGAAATGCATGAG 6528
                                                                                                                                                                                                                                                                                                                                                                             ysAspLysSerLeuThrThrIleThrGluLeuGlnArgArgIleGlnGlu 1292 :::||| ::: |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTGGAG.....CAGAAGATCCAAGTGCTACAATCCAAAAATGCC 6378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uThrGlnIle...SerAspLeuAsnGluLysLeuAlaAsnLeuAsnArgL 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAGATGGCAAGCAGAAACTGGAGAAGAAAGGAAGAAATCAGTAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCCTTGATGAGGCCAAAAATAATTATTGTTTTTGCAATCTTCAGTG
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                                                                                                                                                                                                                                                                                                 SerAla.....LysGlnIleGluAlaLysAspAs 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uGlnGluIleLys.....AspGlnGln......GluArgC 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACCAACTTTGGAAGGAGCAAAACTTAGAACTGAGAAATCTGACAGTGG 6337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAAAATCAAATTCAAGACCAAGAGCAGCTTGTCTCTAAACTG.....
                                                                     AAGATCAATTGAAGGAGCTCACACTAGAAAATAGTGAATTGAAGAAGAGC
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                                                                                                                                                                TAGGCTAGCTGGAGAGTTGCAGTTACTGTTGGAAGAAATAAAGAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATGAGCTTGAATTGACAAAAATGGACAAAATGTCCTTTGTTGAAAAAG 6478
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5915
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seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-139-937-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
                         alignment_block:
                                                                                                                                 alignment_scores:
                                                                                                                                                                                                 ; STRANDEDNESS: single ropology: linear ropology: linear ropology: cona ropology: molecule Type: cona us-08-139-937-12
US-09-750-590-2 x US-08-139-937-12
                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 12, Application US/08139937 Patent No. 5821070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Vei
SOFTWARE: PATENTIN DATA:
APPLICATION NUMBER: US/08/139,937
FILING DATE: 20-OCT-1993
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US/07/979,156
APPLICATION NUMBER: US/07/979,156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                  TELEFAX: 619-535-8949
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 4868 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                          PILING DATE: 20-NOV-1992
ATTORNEY,AGENT INFORMATION:
NAME: CAMPBELL, CATHRYN
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-CJ
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-535-9001
TELEPHONE: 619-535-8949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1367
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1344 nGlnValArgSerLeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHisG 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1383 lGlnAlaAlaLeuLeuGln 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1361 inGluVal......ileAlaIle 1366
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: CELLULAR GENES ENCODING TITLE OF INVENTION: RETINOBLASTOMA-ASSOCIATED PROTEINS NUMBER OF SEQUENCES: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: LEE, WEN-HWA
APPLICANT: SHAN, BEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 4370 LA JOLLA VILLAGE DRIVE CITY: SAN DIEGO STATE: CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGATAGACCTTTTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACCGAGAGAAATTGACTTCTAAAGAAGAATGTCTCAGTTCACAGAAGCT 6878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TyrargThrHisLeuLeuSerAlaAlaGlnGlyHisMetAspGluAspVa 1383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCTTTGCTTTTGGACACAAACAACAGTATGAAGTAGAAATCCAGACA 6828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAATAGCTGAATATCAGCTACGGCTTCATGAAGCTGAAAAGAAACACC 6778
                                                                                                            Quality:
                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
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                                                                  528.50
0.756
55.301
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                                                                Gaps: 53
Percent Identity: 21.440
                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-CJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    9370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Version #1,25
                                                                                                              Length:
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1634	TTATGAAGGCCACAGAACAGAGTCTAGACCCACCAATAGAGGAAGAG	
	In	
821 1584	808 sGlnLeuSerGluLeuAsnLysLysCysGlyGluAspG 	
808 1534	792 HisGluLysGluMetMetAlaLeuLysSgrAsnIleThrGluLeuLysLy	
791 1508	775 euSerLysAsnValSerArgLeuGluThrValPheIleProProGluArg	
775 1461	761 sLysLeuGluMetGluLysLeuLeuMetGluAsnAlaSerL     :::	
761 1411	Le	
746 1361	> -	
731 1319	714 uThrGlnGlnValAsnAsnLeuThrThrGluMetLysAsnValProLeuL :::   ::::          ::::: 1286 CAAAGCAGAAGTAGAGACTCTAAAAACACAAATA	
714 1285	698 GlnThrLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLe	
697 1235	681 lnLysSerGlyGluLeuGlyLysArgIleThrGluLeuThrSerLysAsn :::::::::::::::::::::::::::::::::::	
681 1185	666 sValLysProGluGluHisGluGlnLeuLysSerArgLeuGluG 	
666 1138	650 ArgProLeuLysArgGluLeuGluAsnLeuLysAlaLysLeuAlaGlnHi :::    :::    :::   :::!   ::::::::::::	
649 1088	647	
646 1038	sLysL	
630 1000	614 AlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGl ::::::	
613 953	597 etGluGlyGlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIlePro ::   :::   ::: ::   ::: 907 TGGAAAACCAAATTGCACAACTGAATAAAGAGAAAAGAATTGCTTGTC	
597 906	582 tCysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluM :::      ::::::::::::::::::::::::::::	
582 860	566 GluGlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMe ::::::   ::::::::::::::::::::::::::::	

ω,	105	ThroluGluLeuAsnArg	104R
2	Ü	GCCTCTTTGCAGGACACATTAGAAGT	2473
7	1047	THISI	1031
2 P	1031	0 -	1017 2423
2	1017 2422	3=5	1001 2373
2 0	1000 2372	LeuLysc        ACTGAAA	988 2323
~	987 2322	rLeuGluCluCysCluArgLysPheLysAlaThrGluLysGlu ::::   :::	973 2273
~	973 2272	AAAAATAATTATATTGTTTTGCAATCTTCAGTGAATGGCCTCATTCAAGA	73
٠٠	972 2222	luCysIleLysLeuLysTyrAlaProIleIle	62 73
	962 2172	GluGluIleAlaAlaGlnLysArgGluLeuAspThrIleGlnG	948 2123
		uAla   ::: TCAAACA	933 2073
	932 2072	erGlyLeuArgLysSerMetLysLysValGlnAspAsnSerAlaGluIle :::	916 2031
•	916 2030	eSer  :::  AAATTC	905 1985
-	905 1984	snLeuGluAsnThrGlnAsnGlnValLysAlaGluT 	890 1935
	889 1934	.GluPheValLysIleLysAspGluAsnG) :::       :::::   :::  AGATGTTGTTACTATAAGGTCAGAAAAAAGJ	79 85
	878 1884	ValAspValLysLysLysCysGluAspIleAsnGlr 	865 1835
	864 1834	LysThrAsnArg	861 1785
	860 1784	GluGluIleLysThrAlaLeuSerSerThrLeuAsp;;;;;;;;;;;;;;;;;;;;;;;;;	848 1735
	848 1734	nAsnAspLeuLysLysThrMetSerH1sG1nTyrVa1ProVa1LysThrH :::: :::: TGAAAAGAAGCAGCTCTGTGTCTTACAACAACTGAAGGAAAGTGAGCATC	831 1685
	1684	CATCAGCTGAGAAATAGCATTGAAAAGCTGAGAGCCCGCCTAGAAGCTGA	1635

O PFPOSETLYSANGGINSERGIN	3369 GAGAAAGCTAAAGAGATGTTAGAGACACAAGTGGCCCATCTGTGTTCACA 3418
1338	rProSerLysArgGlnSerGln
1351 GInGInLeunlaAspalaAspargGlnHisGlnGluvallle   1364   11:::::	338LeuIleAspSerLeuGlnGlnGlnValArgSerLeuGln 135
OCCUMENTATION_DIOCK:  GOUGHER	351 GlnG    : 519 CAAA
_documentation_block: equence 12, Application PC/TUS9311310 equence 12, Application PC/TUS9311310 GENERAL INFORMATION:  APPLICANT: BOARD OF RESULTAR GENES ENCODING TITLE OF INVENTION: RETINOBLASTONA-ASSOCIATED PROTEINS APPLICANT: BOARD OF RESULTAR GENES ENCODING TITLE OF INVENTION: RETINOBLASTONA-ASSOCIATED PROTEINS NUMBER OF SEQUENCES: 14 CORRESPONDENCE ADDRESS: ADDRESSEE: CAMPBELL AND FLORES GITY: SAN DIEGO STATE: 4370 LA JOLLA VILLAGE DRIVE CITY: SAN DIEGO STATE: 05-DOLA VILLAGE DRIVE CITY: SAN DIEGO STATE: 05-DOLA VILLAGE DRIVE COMPUTER SAN DIEGO STATE: 05-DOLA VILLAGE DRIVE COMPUTER SOLITORNIA COUNTRY: USA ZIP: 92122 COMPUTER : DEMONITOR SOLITORNIA COUNTRY: USA ZIP: 90122 COMPUTER : DATE: 15-DOLA VILLAGE DRIVE COMPUTER SOLITORNIA COUNTRY: USA ZIP: 90122 COMPUTER : DATE: 15-DOLA VILLAGE DRIVE COMPUTER : DATE: 15-DOLA VILLAGE COMPUTER : DATE:	: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:PCT-US93-11310-1
COUNTRY: USA ZIF: 92122  20MPUTER READABLE FORM: MEDIUM TYPE: FLOPPY disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PATENTION Release #1.0, Version #1.25 URREWT APPLICATION NUMBER: PCT/US93/11310 FILING DATE: 19-NOV-193 CLASSIFICATION NUMBER: PCJ/US93/11310 FILING DATE: 19-NOV-193 CLASSIFICATION NUMBER: FP-CJ 9790 FILING DATE: 19-NOV-193 REGISTRATION NUMBER: FP-CJ 9790 FILEPAN: 619-535-9001 FILEPAN: 619-535-9001 FILEPAN: 619-535-9001 FILEPAN: 619-535-9849 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS: FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS FILEPAN: 619-535-8949 ORMATION FOR SEQ ID NO: 12: EDUENCE CHARACTERISTICS FILEPAN: 619-590-2 EDUENCE CHARACTERIST	_documentation_block: equence 12, Application PC/TUS9311310 GENERAL INFORMATION:  APPLICANT: BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS SITILE OF INVENTION: CELLULAR GENES ENCODING TITLE OF INVENTION: RETINOBLASTOMA-ASSOCIATED PROTEINS NUMBER OF SEQUENCES: 14 CORRESSEE: CAMPBELL AND FLORES STREET: 4370 LA JOLLA VILLAGE DRIVE CITY: SAN DIEGO COTY: CALIFORNIA
CLASSIFICATION: OTTORWEY/AGENT INFORMATION: NAME: CAMPBELL, CAPHRYN REGISTRATION NUMBER: 31,815 REFERENCE_DOCKET NUMBER: 51,815 REFERENCE_DOCKET NUMBER: 31,815 REFERENCE_DOCKET NUMBER: 31,815 REFERENCE_DOCKET NUMBER: 51,815 REFERENCE_DOCKET NUMBER: 535-9001 TELEFAX: 619-535-99001 TELEFAX: 619-535-8949 OTMATION FOR SEO ID NO: 12: FOURMATION FOR SEO ID NO: 12: FOURM	92122  R READABLE FORM: M TYPE: Floppy disk M TYPE: Floppy disk TER: IBM PC compatible TING SYSTEM: PC-DOS/MS-DOS ARE: Patentin Release #1.0, Version #1.2 APPLICATION DATA: APPLICATION DATA: APPLICATION DATA: APPLICATION DATA:
TELEPAX: 619-535-8849 ORMATION FOR SEQ ID NO: 12: EQUENCE CHARACTERISTICS: LENUTH: 4868 base pairs TYPE: nucleic acid STRANDEDNESS: single TOPOLOGY: linear OLECULE TYPE: CDNA 93-11310-12  ent_scores: Quality: 528.50 Ratio: 0.756 Ratio: 0.756 Ratio: 0.756 Ratio: 1.756 Ratio: 0.756 Ratio: 0.7	CLASSIFICATION: TTORNEY/AGENT INFORMATION: NAME: CAMEBELL, CATHRYN REGISTRATION NUMBER: 31,815 REFERENCE/DOCKET NUMBER: EP-CJ 979 ELECOMMUNICATION INFORMATION: TELECPHONE: 619-535-9001
ent_scores:  Quality: 528.50  Ratio: 0.756  Ratio: 0.756  Ratio: 0.756  Fariarity: 55.301  Percent Identity: 21.440  ent_block: -750-590-2 x PCT-US93-11310-12  seg 1/1 to: PCT-US93-11310-12  seg 1/1 to: PCT-US93-11310-12  fill:::::	TELEPAX: 619-5 INFORMATION FOR SEQ SEQUENCE CHARACTEE LENGTH: 4868 b TYPE: nucleic STRANDEDNESS: TOPOLOGY: line MOLECULE TYPE: cl -US93-11310-12
ent_block: -750-590-2 x PCT-US93-11310-12 seg 1/1 to: PCT-US93-11310-12 from: 1 to: 4868 seg 1/1 to: PCT-US93-11310-12 from: 1 to: 4868 1	nment_scores:  Quality: 528.50  Ratio: 0.756  Ratio: 0.756  Cent Similarity: 55.301  Percent Identity: 21.44
seg 1/1 to: PCT-US93-11310-12 from: 1 to: 4868 76 AsnGlnArgGluHisGlnAsnIleGlnAspLeuGluIleGluAs	_block: 0-590-2 x PCT-US93-11310-12
39 AATCAGGAAGATATCCATAATCTTCAACTGCGGGTAAAAGAGACATCAAA E 90 nGluAspLeuLysGluArgLeuArgLysIleG 3	seg 1/1 to: PCT-US93-11310-12 from: 1 to: 4868 76 AsnGlnArgGluHisGlnAsnIleGlnAspLeuGluIleGluAs
	90 nGluAspLeuLysGluArgLeuArgLysIleG 3       :::          ::: 

582 tCysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluM 597 :::       :::::::::::::::::::::::
300 G1UG1YLYSGEUMETG1UG1UASnLYSArgLeuG1nLYSG1ULeuSerMe 582 :::::   :::::::::::::::::::::::::::::
49 rgAsnGlnIleLysGlnAsnGluMetI :::::   ::::: 63 AGCCAGAGGTGAAGGAAAAAGACGGAAC
532 SASPMETLYSVAILYSTYTGIUGIYALASETALAGIUVAIGIYLYSLEUA 549 ::::::::::::::::::::::::::::::::::::
516 AlaAlaThrGlyAsnHisArgLeuMetGluGluLeuLysAspGlnLeuLy 532 :::   ::: :: :: :: :: :: :: :: :: :: ::
499 ysGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuThrSerAsp 515
482 pAlaLeuLysAspValGlnLysArgMetTyrGluSerGluGlyLysValL 499 :
466 CysGluArgValLysGluAspSerAspGluGlnTleLysGlnLeuGluAs 482
449 lnAsnGluLeuAlaHistysValAlaGluCystysAlaLeuAlaLeuGlu 465 :: ::    :::    511 AGGCTGACTTAGAGGTAGTTCAAACAGAGAAGCTATGTTTA 551
432 uAlaMetArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuG 449 : :::   :::
417 AsnGlnAlaSerTyrSerGluAsnGluIleLeuLysLysGluLeuGl 432 :::    :::::   ::: 411 GTGAATGACAGCTGGAAGGAGAATTTCTTGATGTGGAAAATGAGCTGAG 460
400 alHisMetGlnSerArgSerMetLeuArgProLeuGluLeuAlaLeuPro 416 ::   :::::      361 TGCATGCAGATAAATCATCACCGTGAAGATATTGGAGATAATGTGGCCAAG 410
cTyrMetThr ::: GTAGAA
367 HisLeuGlySerGlySerHisPheArgLysGluAspMetLeuLeuLysGl 383
350 euArgThrIleGluAlaLeuLysSerArgPheLysTyrPheGluSerAsp 366     :::::::::::       :::
333 uLysLeuLysSerLeuLeuAlaAlaLysGluLysGlnHisGluGluSerL 350
318 LeuAsnGluGluValMetValAlaAspAspLeuGluSerGluLysGl 333    ::: :::      ::: :::   :::        :::
301 lnGlnGluGlnArgIleLeuLeuAspLysValAsnGlyLeuGlnLeuGln 317 :::::

860	isGluGluIleLysThrAlaLeuSerSerThrLeuAsp	949
1734	CTCTGTGTCTTACAACAACTO	1685
848	snAspLeuLysLysThrMetSerHlsGlnTyrValProValLysThr	831
831 1684	CATCAGCTGAGAAATAGCATTGAAAAGCTGAGAGCCCGCCTAGAAAGCTGA	822 1635
6	attatgaaggccacagaacagagtctagacccaccaatagaggaaga	æ
821		821
i i	GTAGCAGCCTTGTGTGGTGACCAAG	1535
821	GlotenserGlutenlagntvgtvgCvgGlvGluAgpG	Ö
лО	sGluLysGluMetMetAlaLeuLysSerAsnIleThrGluLeuLysLy	ن د
791 1508	rLysAsnValSerArgLeuGluThrValPheIleProProGluArg ::::::     :::     AGAAGAAAAGGAGCAAGCAGAGATACAGATCAAAGAAGAATCT	775 1462
775 1461	LeuGluMetGluLysLeuLeuMetGluAsnAlaSerL     :::::             AGTTGTCAGAACTAGACAAGTTACTCTCTTCATTAAAAGTC	761 1412
761 1411	LeuasnlyslysleuSeraspValThrH1slysTyrThrGluly     :::::::  :::::   :::     ::::::::::	747 1362
<u>ω</u>	ValSerGluGluMetLy8Ly8SerHi\$AspValIleValAspAsp 	731 1320
731 1319	ThrGlnGlnValAsnAsnLeuThrThrGluMetLysAsnValProLeuL :::   ::::::: AAAGCAGAAGTAGAGACTCTAAAAAACACAAATA	714 1286
71 <b>4</b> 1285	rLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLe 	698 1236
697 1235	<pre>'BArgIleThrGluLeuThrSerLysAsn :::::::::::::::::::::::::::::::::::</pre>	681 1186
681 1185	GluGlnLeuLysSerArgLeuGluG    :::     ::     TCGCAGAGAAACTGAAAGAACĢCGAGC	666 1139
666 1138	luLeuGluAsnLeuLysAlaLysLeuAlaGlnHi :::   :::   :::::: GCATCGAGAAACTGAGAGTTCGCATTGAGGCCGA	
649 1088	ASDGLUTHE STATE ASGGTGAGGTGAGGTGAGGAGGAAGTGAGGTGAGGTGAG	647 1039
546 1038	<pre>sLysLeuIleAspValGluArgGlu :::::   :::::CTGAATGTCTCCAAGGCC</pre>	630 1001
1000	uSerAsnGluLeuAsnGl 6     ::::::     SAGTGAATCAGATTATGA 1	614 954
953	etG.uGIyG.nLeuLysAspleuSetalaLysLeuAlaLeuSetilerto o ::   :::   :::  ::   :::  ::  TGGAAAACCAAATTGCACAACTGAATAAAGAGAAAGAATTGCTTGTC 9	907

uuGluAsnAlaLysGlnThrSerGluIleLeuAlaAla 1086	luLysLeuValGluGluAsnAlaLy ::::::::::::::::   ::	1070
uLysAspLeuLeuGlnLysTyrThrGluAlaLysLysGluLysG 1070 ::::           :::::    : aaaCaaaaTGACTGCAAAGGAAACTGAGCTGCAGAGGGAAATGC 2622	.GlnLeuLysAspLeuLeuGln ::::::: AAAAGTAAACAAAATGACTGCA	1054 2573
g 105 : AATGGACAAAATGTCCTTTGTTGA 257	ThrGluGluLeuAsnAr	1048 2523
ThrGluArgAlaLeuSerArgLys 104 ::: :::::::::::::::::::::::::::::::::	<pre>snValHisIleGluAsnSerTy   :::</pre>	1031 2 <b>47</b> 3
GluIleLeuThrLeuGlnLysAspLeuLysAspLysA 1031 :::    :::::     CTGACAGTGGAATTGGAGCAGAAGATCCAAGTGCTACAATCCAAAA 2472	sLysGluIleLeuThrLeuGln: :::      ::: AAATCTGACAGTGGAATTGGAG	1017 2423
101 	ThrSerGluGluGluAlaLysL	1001 2373
nLeuSerGlnGlnThrGlnLysTyrAsn 1000 	rG1 AG#	988 2323
GluargLysPheLysAlaThrGluLysGlu 987 :::::   :::::  AAGCAGAAACTGGAGAAGAAGGATGAAGAAATCAGTA 2322	rLeuGluGluCysGluArgLysI ::::   ::: ::::    AGTAGAAGATGGCAAGCAGAAA	973 2273
:: GTTTTGCAATCTTCAGTGAATGGCCTCATTCAAGA 22	AAATAATTATTGTTTTGC	N ·
		973
uLysTyrAlaProIleIle	TyrAl    AAGGC	962 2173
IleAlaAlaGinLysArgGluLeuAspThrIleGinG 962     :::::::::   ::::::    ::::::   GTAAGGCCAAAGAGCAGAATCTTAGTAGTCAAGTAG 2172	GluGluIleAlaAlaC     	948 2123
yrLysLysSerGlnGluGluIleValThrLeuH1s 947     :: :::   ::::::::       TAAAAGAGCTCAATGAGAGAGTGGCAGCCCTGCATAA 2122	LeuAlaLysTyrLysLysSe      :::::    :::  CTTCAAACACAATTAAAAGAGCT	933 2073
SSerMetLysLysValGlnAspAsnSerAlaGluIle 932 	erGlyLeuArgLysSerMetLys ::: :!       AAAGTACAGATGAAA	916 2031
LeuArgGluH1sGluGluLysMetS 916 [   :::      ::::: TTTGAAAATATTTTGCAAGAAAAAGAGCAAGAG 2030	rileSer	905 1985
1LysAlaGluTy 9 : :::     ATCTGAATTAGAAAT 1	LeuLysargAsnLeuGluAsnThrGlnAsnGlnVa     ::::::   ::::::   ::::: CTGACAAATGAATTACAAAAAGAGCAAGAGCGAAT	890 1935
GluPheValLysIleLysAspGluAsnGluIle 889 :::        :::::   ::    ;AATTAGATGTTGTTACTATAAGGTCAGAAAAAGAAAAT 1934		879 1885
ASPVAILYSLYSLYSCYSGLUASPIleASnGln 878	GluLeuValAspValLysLysLysLysLysLysLysLyslyslyslyslyslyslyslyslyslyslyslyslysly	865 1835
nArg 864 	AGAGG	861 1785
TI :::::: ATGCAGATTTACTTAAGGGTAGAGTGGAGAACCTTGAAAGAGAGCTAGAG 1784	TI ::::::::::::::::::::::::::::::::::::	1735

0 2	GAGATGGC	2672
1087 2673	GlnThrLeuLeuGlnLysGlnHisValProLeuGluGlnValGluSe 1102 ::::::	1102 2722
1102	euLysLys 	1118
2723	GCAAAGAT	2766
1118 2767	euLysThrLysGlnArgCysTyrGluLysGluGln	1129
, ,	AAGAAGAG	2816
17	AAAGTGAGAGGAAATAGCCTGAATATCAGCTTACGGCTTCATGAAGCTGA	1143 2866
43	sAsnSerSerValProLeuAlaGluHisLeuGlnValLysGluAlaPheG	160
67	AAAGAAACACCAGGCTTTGCTTTTGGACACAAACAAACAGTATG	910
60	luLysGluValGlyIleIleLysAlaSerLeuArgGluLysGluGluGlu :	176
11	AAGTAGAATCCAGACATACCGAGAGAAATTGACTTCTAAAGAAGAATGT	960
177 1961	SerGlnAsnLysThrGluGluValSerLysLeuGlnSerGluIleGlnAs	193
2	Thrive Classes are not not one to the control of th	
11	ATAATT	048
Ö	erLysTyrLysAlaThrLysSerAspLeuGluThrGlnIleSerAspLeu 1 :::::   }	226
49	AAGAATTGAAGAAAACCAAGATGGAC3	074
75	ATA	242
43	::uv	257
25	AGT	168
69	luLysGluLeuLeuHisPheSerIleGluGlnGluIleLysAspGlnGln 1	273 218
27 <b>4</b> 219		281
2	7	700
69	ThrIleThrGluLeuGlnArgArgIleGlnGluSerAlaLysGlnIleG 1	298 318
298 319	Leu 1	314
315	·· ě	i iii
0	. :	337
ون ر	CAATCTAAACAAGATTCCCGAGGGTCTCCTTTGCTAGGTCCAGTTGTTC 3	468
\$69 c	CAGGACCATCTCAATCCATTATATCAATAACACCTTTATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACACCATCAATAACAAC	
	SHE SHE CICCARICCULLCIGITACT GARAGAGATTATCATCTGGC 3	Ē

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COMPUTER READABLE FURN:
MEDIUM TYPE: Filoppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/466,390
FILING DATE: 06-JUN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-013
TELEPHONE: (617) 248-7000
TELEFAX: (617) 248-7000
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
TENCTH: 6306 base pairs
                                        alignment_block:
US-09-750-590-2 x US-08-466-390-3
                                                                                                                                                                                                                            ; JOURNAL: J. Cell Biol.
; VOLUME: 116
; PAGES: 1395-1408
; DATE: 1992
US-08-466-390-3
                                                                                                                                                                   alignment_scores:
Align seg 1/1 to: US-08-466-390-3 from: 1 to: 6306
                                                                                                         Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-466-390-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3,
Patent No. !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 6306 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                       NAME/KEY: CDS
LOCATION: 1.6306
PUBLICATION INFORMATION:
AUTHORS: COMPTON, DUANE A
AUTHORS: SZILAK, ILYA
AUTHORS: CLEVELAND, DON W
TITLE: PRIMARY STRUCTURE OF NUMA, AN INTRANUCLEAR
TITLE: PROTEIN THAT DEFINES A NOVEL PATHWAY FOR
TITLE: SECREGATION OF PROTEINS AT MITOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA, HURWITZ & THIBEAULT
STREET: 125 HIGH STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: TOURATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 125 HI
CITY: BOSTON
STATE: MA
COUNTRY: USA
ZIP: 02110
                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5686562
                                                                                                    514.00
0.662
50.357
                                                                                                  Gaps: 61
Percent Identity: 20.052
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407	SerGlnCysThrSerThrGlyMetProValHisMetGlnSer	391
Ċ	CCTCCCAGGCTCATGGGGCCCGGTTGACTGCCCAGGTGGCCTCTCTGA	1463
390	GlyGlnMetTyrMetThrAs	384
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Ñ.	GAAACCCTGAAGCAGTGCCAGGACCTGAAGACAGAGAAGAGG	7 0
7	AsnLeuSerGlnMetLeuAspGluValAsnThrLysSerAsn	י עכ
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6 1	.vaclvarqqluI.euTroLvaLvaqlvProSerLeuGlqQlnArq.	× .
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ıω	euGlyH1sAspSerSerTyrTyrAlaArgIleGlyAspAsnLeu 2	217
142	AGCTGGAGCTGGAGCTGAGCAGCCGCAGGAGCGCGCGAGAAGG	9
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heLeuAlaLeuLysGluHisLeuT 513 :: ::: ::    : TTCAGGTGGCTAATGAAG 1888	496 yLysvallysGlnMetGlnThrH1sPheLeuAlaLeuLysGluH1 :    ::: :: ::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::   :::	
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uIleAl 9 :::   CTTAGC 3	
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09 .ArgGluHisGluGluLy ::::::::::::   ::: 08 CCAGAAGCAGCAGGAGCA	
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64	

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seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-470-950-3
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                                                                                                            alignment_scores
                                                                                                                                                                       US-08-470-950-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08470950 Patent No. 5698439 GENERAL INFORMATION:
                                                      Percent Similarity:
US-09-750-590-2 x US-08-470-950-3
                                                                                                                                                                                                                                                                                                              PUBLICATION: 1.6306
AUTHORS: COMPTON, DUANE A AUTHORS: SZILAK, ILYA AUTHORS: CLEVELAND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
ANAME: PITCHER ESO, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-
TELECOMMUNICATION INFORMATION:
TELECHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (617) 248-7100 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4977 CCGCCACCTTACTGCCCAGGTGCGCAGCCTGGAGGCACAGGTTGCCCATG 5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5027 CAGACCAGCAGCTTCGAGACCTG 5049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1356 laAspArgGlnHisGlnGluVal 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPDATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 6306 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: TOUKATLY, GARY
APPLICANT: LIOGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: CDNA
                                                                                                                                                                                           JOURNAL: J. Cell I
VOLUME: 116
PAGES: 1395-1408
DATE: 1992
                                                                                                                                                                                                                                                                     TITLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/470,950 FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: MA
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                                                                          Quality:
Ratio:
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                                                                                                                                                                                                                                                                 PRIMARY STRUCTURE OF NUMA, AN INTRANUCLEAR PROTEIN THAT DEFINES A NOVEL PATHWAY FOR SEGREGATION OF PROTEINS AT MITOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: TESTA, HURWITZ & 125 HIGH STREET
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                                                        Percent Identity:
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                                                                                                Length:
                                                            20.052
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314 AGTGGCTA 1068	ã.
LeuAspL 310	293 uLysGluArgLeuArgLysIleGlnGlnGlnGlnArgIleLeuLeuAspL 
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່ ທີ່ N	euAspAsnLysLeuLeuThrGlnGlnValAsnAsnLeuThrThrGluM :::: ::::::::::::::::::::::::::::::::	708 2538
ii o	ThrSerLy9AsnGlnThrLeuGlnLysGluIleGluLy9ValCy :::	692 2497
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; DATE: 1992
US-08-467-781-3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARATERISTICS:
LENGTH: 6306 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08467781 Patent No. 5780596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PATENTIN Release #1.0, VECURRENT APPLICATION DATA:
APPLICATION NUMBER: U5/08/467,781
FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESO, EDMUND R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION
                                                                                                                                                                                                                                    NAME/KEY: CDS
LOCATION: 1.6306
PUBLICATION INFORMATION:
AUTHORS: COMPTON, DUANE A
AUTHORS: SZILAK, ILYA
AUTHORS: CLEVELAND, DON W
TITLE: PRIMARY STRUCTURE OF NUMA, AN INTRANUCLEAR
TITLE: PROTEIN THAT DEFINES A NOVEL PATHWAY FOR
TITLE: SEGREGATION OF PROTEINS AT MITOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: NO
TITLE OF INVENTION: IN
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: TOUKATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
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CITY: BOSTON
STATE: MA
                                                                                                                                                                                                    JOURNAL: J. Cell Biol. VOLUME: 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                          Quality:
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USA
                                                      Ratio:
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                                514.00
0.662
50.357
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27,829
                                Percent Identity: 20.052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MTP-013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version #1.25
                                                                    Length:
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Align seg 1/1 to: US-08-467-781-3 from: 1 to: 6306 US-09-750-590-2 x US-08-467-781-3 1019 CCCTCAATGAGCTGACGGAGGAGCACACCAAGGCCACTCAGGAGTGGCTA 1068 1363 1263 1163 CACAGCTGGAAGAACACTTGTCCCAGCTGCAGGATAACCCCACCCCAGGAG 1212 1069 GAGAAGCAGGCCGAGCTGGAGAAGGAGCTCAGCGCAGCC.....CTGCA 1112 315 1413 GCAGAGCTCCATCTCCAACCTCAGCCAGGCCAAGGAAGAGCTGGAGCAGG 1462 362 355 1213 AAGGGCGAGGTGCTGGGTGATGTCTTGCAGCTGGAAACCTTGAAGCAAGA 1262 329 uSerGluLys......GluLysLeuLysSerLeuLeuAlaAlaLysGluL 344 969 TTCCTTTAAGCTGCGGGAGTTTGCCAGTCATCTGCAGCAGCTACAGGATG 1018 922 CAGATGGAT...CGCAAAATCAACCAGCTTTCGGAGGAGAATGGAGACCT 968 277 GlnArgGluHisGlnAsnIleGlnAspLeuGluIleGluAsnGluAspIe 293 875 TGCATGAAACCCTGAAGCAGTGCCAGGAC...CTGAAGACAGAGAAGAGC 921 825 CAAGGAGCTTGAGGAGCTGCGTGACAAGAATGAGAGCCTTACCATGCGGC 874 247 .AsnLysGlyArgGluLeuTrpLysLysGlyProSerLeuGlnGlnArg. 262 775 234 AspIleLeuThrLeuLeuLysThrAlaSerGluAsnSer........... 246 743 ATGCA......CAGATAGCCATGATGCAGCAGCGCATT 217 spAlaLeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAspAsnLeu 233 693 TGAGCTGGAGCTGGAGCTGAGAACCGCAAGCTCCTCACCGAGAAGG 201 pAlaValGluVal...LeuIleLysAsnGlyAlaAspValThrLeuLeuA 643 CAGATGAGACGGCTGAAGAAGCAGCTTGCTGATGAGAGAAGTAATAGGGA 692 185 LysGlnAsnArgThrAlaLeuMetLouGlyCysGluTyrGlyCysLysAs 201 293 uLysGluArgLeuArgLysIleGlnGlnGlnGlnArgIleLeuLeuAspL 310 263 383 372 384 .....GlyGlnMetTyrMetThrAsp 390 .......AsnLeuSerGlnMetLeuAspGluValAsnThrLysSerAsn 276 yrPheGluSerAspHis.....LeuGlySerGly 371 .....GlnLeuGlnLeuAsnGluGluValMetValAlaAspAspLeuGl 329 GCCCACTTCGAAGAAGAAAAGCAGCAGCTGTCTAGCCTGATCACTGACCT 1412 SerHisPheArgLysGluAspMetLeuLeuLysGln..... GGCAGCCACTCTTGCTGCAAACAACACACACCTCCAAGCCAGGGTAGAGA 1312 .....AlaLeuLysSerArgPheLysT 362 824 774 742 383

64	630 2253	614 2221	59 218	58 213	56 208	203	535 1989	521 1939	513 1889	496 1845	480 1795	474 1745	457 1695	441 1657	424 1613	407 1563	391 1513	
7 sn	0 uLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeuA :::: ::!   :::::	4 AlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGl           :::      :::   GCAGAGGACCCGAAGCCTGGTGGAGCAGCATAA	spLeuSerAlaLysLeuAlaLeuSerIlePro ::::    GTATCTCT	2 tCysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluM: :::	G :: ₩	2 leLysGlnAsnGluMetLeuValGluGluPheLysArgAsp 5 :::::::::::::::::::::::::::::::::::	SValLysTyrGluGlyAlaSerAlaGluValGlyLysLeuArgAsnGlnI:	HisArgLeuMetGluGluLeuLysAspGlnLeuLysAspMetLy 5	hrSerAspAlaAlaThrGlyAsn	yLysValLysGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuT:	LeuGluAspAlaLeuLysAspValGlnLysArgMetTyrGluSerGluGl:::          :::::::       :::::::::	spGluGlnIleLysGln :::   :::   cccagcaacTggccacTgcagaggagggagaggccTccTTAAGggAg	aGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSerA 4 ;;;	AlaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysValAl:::::    :::    :::    :::	snGluIleLeuLysLysGluLeuGluAlaMetArgThrPheCysAspSer 4 ::    :::::::::::::::::::::::::::::::	tLeuArgProLeuGluLeuAlaLeuProAsnGlnAlaSerTyrSerGluA 4 :::         :::       ::: :::::: ggcTggcCTgAAgCAGCAGCCAAAGAGAAGCAGGCCCAGCTAGCACAGA 1	SerGinCysThrSerThrGlyMetProValHisMetGinSerArgSerMe 40     :::     :::	
651		630 2252	613 2220	59 <b>7</b> 2185	582 2138	565 2088	552 2038	35 988	938	513 1888	496 1844	479 1794	474 1744	457 1694	656	424 1612	562	

871	LysLysCysGluAspIleAsnGlnGluPheva	881
3214		3263
3264	lLys1leLysAspGluAsnGluIleLeuLysArgAsnLeuGluAsnThrG :::::   ::::   :::::   :::::   GCAAGTGAAAGGA	898
898		900
3308	TGCTGGCAGGACAGAGCCAACAGGC	3357
901	ValLysAlaGluTyrIleSerLeu	908
3358	AGCAATG	3407
909	ArgGluHisGluGluLysMetSerGlyLeuArgLysSerMetLysLysV	925
3408	GACAGCCTGGAACGCAGCCTCGAGGCTG	3457
92	alGlnAspAsnSerAlaGluIleLeuAla	934
3458	ACAGTGCTCTGGAGACTCTGCAGGGC	3507
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3558	::: :::         ::::::::::::::::::::	
964		64
3608	GCAAGGCTGAAGATGAGTGGAAGGCCCAGGTGGCCCGGGGAGGAGAGAG 3	1657
96	LysLeuLysTyrAlaProIleIleSerLeuGluGlu	976
	GETVAVAGGAAAAATAGCCTCATCAGCAGCTTGGAGGAGGAGGTGTCCAT 3	707
3708	. CysGluArgLysPheLysAlaThrGluLysGluLeuLysG 9:	990
990	luGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGluGluAla 1	0
3758	GGCTGGTGATGGCCGAGTCAGAGAAGAGCCAGAAGCTGGAGGAGAGCTGC 3	1807
1007	LysLysCysLysGlnGluAsnAspLysLeuLysLysGluIleLeuThrLe 1	023
3808	GCCTGCTGCAGGCAGAGACAGCCAGCAACAGTGCCAGAGCTGCAGAACGC 3	1857
1023	uGlnLysAspLeuLysA 1	029
3858	AGCTCTGCTCTGCGGAGGAGGTGCAGAGCCTCCGGGAGGCAGGC	907
1029	aLeuSe	045
3908	AACAGCGGTTGGCTTCAGAGAACCTGCGGCAGGAGCTGACCTCACAGGCT 3	957
1046	sThrGluGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTy 1	062
3958	4	007
1062	_	078
800	AGAAAGAGCAGGCCCTCTCCACCCTGCAGCTCGAGCACCACCAGCA 4	057
07	SGlnThrSerGluIleLeuAlaAlaGlnThrLeuLeuGln 1	091
4056	CCTGGTGAGTGAGCTGCTGCCAGCTAAGCACCTCTCTGCCAGCAC	107

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4240
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GlnLeuThrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuIl 1339
                                                                                                                                                                                           nGluSerAlaLysGlnIleGlu.....AlaLysAspAsnLysIleThrG 1306
                                                                                                                                                                                                                                                                                        ArgCysAspLysSerLeuThrThrIleThrGluLeuGlnArgArgIleGl 1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGTGCAGCAGCAGAAGCTGAAGGCTGTCCAGGCTCAGGGAGGCGAGAG 4703
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                                                                                             luLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSer 1322
                                                                                                                                                  GGAGCAGCTGCGGAGCCTGGAGCAGCTGCAGAAGGAAAACAAA.....G
                                                                                                                                                                                                                                                ANAGCCAAAACACATTATGATGCCAAGAAGCAGCAGGAACCAAGAGCTGCA 4853
                                                                                                                                                                                                                                                                                                                                                AGTTGAGCCAGAAGGAGCAGCAGCTGAGCACTATAAGCTGCAGATGGAG
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                                                     AGCTGCGAGCTGAAGCTGAACGGCTGGGGCCATGAGCTACAG.....
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seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-483-924-3
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                                                                                              alignment_scores:
   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (617) 248-7100
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 6306 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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CORRESPONDENCE ADDRESS:
ADDRESSEE: TOSM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1339 eAspSerLeuGlnGlnGlnValArgSerLeuGlnGlnLeuAlaAspA 1356
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REFERENCE/DOCKET NUMBER: MT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 248-7000
TELEPAX: (617) 248-7100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/483,924
FILING DATE: 07-JUN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: PITCHER ESQ, EDMUND R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPORTING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBLICATION INFORMATION:
AUTHORS: COMPTON, DUANE A
AUTHORS: SZILAK, ILYA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 125 H
CITY: BOSTON
STATE: MA
                                                                                                                                                                                                                                                  TITLE: PRIMARY STRUCTURE OF NUMA, AN INTRANUCLEAR TITLE: PROTEIN THAT DEFINES A NOVEL PATHWAY FOR TITLE: SEGREGATION OF PROTEINS AT MITOSIS JOURNAL: J. Cell Biol. VOLUME: 116
PAGES: 1395-1408
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ZIP: 02110
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LOCATION: 1..
                                                                                                                                                                                                                           PAGES: 139:
DATE: 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCCACCTTACTGCCCAGGTGCGCAGCCTGGAGGCACAGGTTGCCCATG 5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGACCAGCAGCTTCGAGACCTG 5049
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                                                                Quality:
                              Ratio:
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125 HIGH STREET
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ) 248-7100
) 248-7100
--- NO: 3:
514.00
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      Percent Identity:
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                                     Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version
      1541
61
20.052
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US-09-75	t_block: 50-590-2 x US-08-483-924-3
Align se	8-4
185 643	LysGlnAsnArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysLysAs 201 ::::::::    :::    :::    :::    CAGATGAGACGGCTGAAGAAGCTAGCTGATGAGAAGTAATAGGGA 692
201 693	PAlaValGluValLeuIleLysAsnGlyAlaAspValThrLeuLeuA 217   :::    :::
217 743	\spSerSerTyrTyrAlaArgIleGlyAsp&     ;;; ;;; CAGATAGCCATGATGCAGCAGC
234 775	hrLeuLeuLysThrAlaSerGluAsnSe: 
247 825	ProSerLeuGlnGlnA         GAGAGCCTTACCATGO
263 875	AsnLeuSerGlnMetLeuAspGluValAsnThrLysSerAsn 276 :::   ::::           :::::   :::::: TGCATGAAACCCTGAAGCAGTGCCAGGACCTGAAGACAGAGAGAGG 921
277 922	luIleGluAsnG] :::         CGGAGGAGAATGG
293 969	uLysGluArgLeuArgLysIleGlnGlnGluGlnArgIleLeuLeuAspL 310  ::: :::      :::: :::
310 1019	CAGCAAGGCCACTC
315 1069 (	GlnLeuGlnLeuAsnGluGluValMetValAlaAspAspLeuGl 329           ::::::   ::: :::       ::   GAGAAGCAGGCCCAGCTGGAGAAAGGAGCTCAGCGCAGCCCTGCA 1112
329 I 1113 (	laAla ::: AGGGA
344 1 1163 (	ThrIleGlu. ::::: CAGCTGCAGG
354	354
1 3	GGGCGAGGTGCTGGGTGATGTCTTGCAGCTGGAAACCTTGAAGCAAG
355 . 1263 G	GCAGCCACTCTTGCTGCAAACAACA
362 y 1313 T	rPheGluSerAsp :::   :::: GCTGGAGACTGAG
372 S : 1363 G	erHisPheArgLysGluAspMe ::      :::::    GCCACTTCGAAGAAGAAAAGCA
383 . 1413 G	CAGAGCTCCATCTCCAACCTCAC
	CHONGCICCAICICCAACCICAGCCAGGCAAGAAGCTTGGAGCAGG

384	GlyGlnMetTyrMetThrAsp 3	90
1463	CCTCCCAGGCTCATGGGGCCCGGTTGACTGCCCAGGTGGCCTCTCTGACC 1	512
391 1513	SerGlnCysThrSerThrGlyMetProValHisMetGlnSerArgSerMe 4     :::     :::::::::::::::::::::::::	562
407 1563	tLeuArgProLeuGluLeuAlaLeuProAsnGlnAlaSerTyrSerGluA 4 :: ::         :: :: :::::: GGCTGGCCTGAAGCAGCCAGGCCAAGA 1	24
424 1613	snGluIleLeuLysLysGluLeuGluAlaMetArgThrPheCysAspSer 4 ::	40 656
441 1657	AlaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysValal 4 ::::::	5 <b>7</b>
457 1695	aGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSerA 4 :::	74 744
474 1745	spGluGlnIleLysGln 4 ::::    :::::::::::::::::::::::::::::	79 794
480 1795	LeuGluAspAlaLeuLysAspValGlnLysArgMetTyrGluSerGluG1 4 :::                         ::::::::::	96 844
496 1845	5 yLysValLysGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuT 51	13
513 1889	hrSerAspAlaAlaThrGlyAsn52 ::    :::    ::    CCCGGGACAGTGCCCAGACCTCAGTGACACAGGCCCAGCGGGAGAAGGCA 19	20 38
521 1939	HisArgLeuMetGluGluLeuLysAspGlnLeuLysAspMetLy 53 	88 35
535 1989	SValLysTyrGluGlyAlaSerAlaGluValGlyLysLeuArgAsnGlnI 55: :::         :::         :::	38
552 2039	LeLysGlnAsnGluMetLeuValGluGluPheLysArgAsp 5	088
566 2089	GluGlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMe 58	38
582 2139	tCysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluM 5; ;;	97
597 2186	.laLeuSerIlePro 61	20
614 2221	rAsnGluLeuAsnGl 63	52
630 2253	uLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeuA 647 :::: :::    ::::::        GCGGGAACGAAAGGAGCTGGAAGAAGAAGAGGCTTGGGCTCAAGGAGCTTGG	7

870	enserserThrLenAsplvsThrAspArgGluLeuValAspValLvs	226
3163	ACGAGCAGCGTGTGGAGTTCGCTACCCTGCAAGAGGCA	3114
855	SerH1sGlnTyrValProValLysThrH1sGluGluIleLysTh	838
838	CTGGAGAAGGCGGCCAGAGCAGAGCTTGAGATGCGGCTGCAGAACGCCCT	833
3063	GCGCGGCTGACCCAGGAGCGGGGCCGTGCCCAGGCTGACC	3014
832	IleTyrSerLeuMetSerGluAsnAs	823
3013	; ATGGAGÀGCCAGGGGCAGCAGC	2964
823	AsnLysLysCysGlyGluAspGlnGlu	81
813 2963	LysGlnLeuSerGluLeu	801 2914
800 2913	metmetalaLeulys :::::   ::::: CCAGTTCTGCAGCACACAGGCAGCGCTGCAGGCTATGGAG	795 2864
2863	AAGGAGCCTGCGAGGGCAGGAGACAGACAGCCCGAGTGGCTGGAAGAGC	2814
795	IleProProGluArgHisGluLysG	787
2813	:: TGGTCCGCAAGGCAGGTGAGCAGGAGGAAACAGCCTCCCGGGAGTTAGT	0
786		785
784 2763	ArgLeuGluThr            GCTTGGAGACC	769 2714
769 2713	TCCACTC	758 2664
758 2663	AspLeuAsnLysLysLeuSerAspValThrH1sLysTy :::   ::: ::::::::::::::::::::::::::::	742 2620
•	:::     ::::::::::::::::::::::::::::::	œ
741	<b>AsnValProLeuLysValSerGluGluMetLysLysSerHisAsp</b>	725
725 2587	SLEUASPASHLYSLEULEUTHrGlnGlnValASHASHLEUTHrThrGluM ( ::: ::: :::: :::::: ::::::::::::::::	708 2538
2537	Threesineyscillecturysvalcy      ::::::          ::: ACTTTGAAGGAGGAATGTGAGAAAGGCCCG	2497
<u>ح</u> ز	GTATGAGGATAGCCAGCAAGAGGAGGACAGTATGGCGCCATGTTCCAG	4
91	ArgileThr :::	680
. 4	AGAGTGAGTGAGCAGCTCGTCAAAGAAGTAGCTGCCTGGCGTGACG	9 0
679	proGluGluHisGluGlnLeuLvsSerArgLeu	ע ע
668 2396	uAs	652 2353
2352	:   GCCTCGATTACTGCAGCTTGGGGAGGCCCATCAGGCTGAGACT	2303
651	GluThrArgPr	647

4190	CAGAGCTGCTGCGGGCCCAGCGGGAGCTTGGGGAGCTGATTC	4239
12	:	1136
24	CAGAAGGTGGCAGAGCAGGGGAGCGAACAGCTCAGCAGCTGCGGGCAGAC	4289
1137	GCCACCTATCCACCACCACCACCACCACCACCACCACCACC	14
1 6	SUCCASELIATOR SUCASCITGAGEATGETGAAGAAGGEGEATGGEET	L)
ω		1300
1154	·····GlnValLysGluAlaPheGluLysGlu	16
4390	TTTCTGGAAGTGGAGTTGGACCAGG	43
1163	IGlyIleIleLysAlaSerLeuArgGl	1176
4	GGCAGCCGTACGTGCTGATGCTGAGACCCGTCTGGCTGAGGTGCAGCC	4489
1176 4490	LUSErGlnAsnLysThrcluGluValSerLysLeuGlnSerGluIleGln 	1192
1193	nAlaLeuLysLysLeuGluThrArgGluValValAsp	Ö
	GTGCCAAGGTCAAGGTCCTGGAGGAGAGGCAG	4572
20	SerLysTyrLysAlaThrLysSerAspLeuGluThrGlnIleSerAsp	1226
57	CGGTTCCAGGAAGAGAGGCAGAAACTCACTGCCCAGGTGG	4618
2	snArgLysTy	1242
. 6	TAAGAAACTGGCTGACTCTGACCAAGCCAG	4653
. 4	LysGluLeuSerAlaLysA	1256
65	GGTGCAGCAGCAGAAGCTGAAĞGCTGTCCAGĞCTCAGGGAGGC	4703
l ka	euHisPheSerIleGlu	1266
	CAGCAGGAGGCCCAGCGCTTCCAGGCCCAGCTGAATGAACTGCAAGCCC	4753
1754	Gaccaccaccaccaccaccaccaccaccaccaccaccacc	N
1975		0
4804	LeuTnrThrIleThrGluLeuGlnArgArgIleGl TATGATGCCAAGAAGCACACAACACACACACACACACACA	29
1291	IISerA aLvsG nT sG	, ,
95	GCGGAGCCTGGAGCAGCAGAAGGAAAAGAAA GCGGAGCCTGGAGCAGCAGAAGGAAAGAAA	1306
1306	uLeuAsnAspValGluArqLeuLvsGlnAlaLeuAsnGlvIeuser	ا ب
86	TGAGCTACAG	J N

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MOLECULE
FEATURE:

FEATURE:

NAME/KEY: CDS
LOCATION:
1..6306
PUBLICATION INFORMATION:
AUTHORS: COMPTON, DUANE A
AUTHORS: SZILAK, ILLYA
AUTHORS: CLEVELAND, DON W
TITLE: PRIMARY STRUCTURE OF OF NUMA, AN INTRANUCLEAR
TITLE: SEGREGATION OF PROTEINS AT MITOSIS
TITLE: SEGREGATION OF CELL BIOLOGY.

116
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ATTORNEY/AGENT INFORMATION:

NAME: PITCHER ESQ, EDMUND R

REGISTRATION NUMBER: 27,829

REFERENCE/DOCKET NUMBER: MTP-(
TELECOMMUNICATION INFORMATION:

TELEPHONE: 617/248-7100

TELEFAX: 617/248-7100

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-08-195-487-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/08195487 Patent No. 5783403
                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5027 CAGACCAGCAGCTTCGAGACCTG 5049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1356 laAspArgGlnHisGlnGluVal 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC COMPARIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/195,487
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/901,701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESSE: TESTA HURWITZ & THIBEAULT
STREET: 53 STATE STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: TOUKATLY, GARY
APPLICANT: LIDGARD, GRAHAM P
TITLE OF INVENTION: NOVEL MALIGNANT CELL TYPE MARKERS OF THE
TITLE OF INVENTION: INTERIOR NUCLEAR MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 53 ST
CITY: BOSTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
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lignment_scores: Quality: 512.00 Length: 1541 Ratio: 0.660 Gaps: 61 Percent Similarity: 50.357 Percent Identity: 20.052 Lignment_block:
Align seg 1/1 to: US-08-195-487-3 from: 1 to: 6306  185 LysGlnAsnArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysLysAs 201
201 palaValGluValLeuIleLysAsnGlyAlaAspValThrLeuLeuA 217
217 spalaLeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAspAsnLeu 233
ThrLeuLeuLy :::      :: GCCCTGCTGAA
247 .AsnLysGlyArgGluLeuTrpLysLysGlyProSerLeuGlnGlnArg. 262 ::::: :::          :::        :::    825 CAAGGAGCTTGAGGAGCTGCGTGACAAGAATGAGAGCCTTACCATGCGGC 874
263AsnLeuSerGlnMetLeuAspGluValAsnThrLysSerAsn 276 :::    :::         ::::::    :::::::::
277 GlnargGluHisGlnAsnIleGlnAspLeuGluIleGluAsnGluAspLe 293
293 uLysGluArgLeuArgLysIleGlnGlnGlnGlnArgIleLeuLeuAspL 310
310 ysValasnGlyLeu
315GlnLeuGlnLeuAsnGluGluValMetValAlaAspAspLeuGl 329
329 uSerGluLysGluLysLeuLysSerLeuLeuAlaAlaLysGluL 344 :::::::
344 ysGlnHisGluGluSerLeuArgThrIleGlu
354 354 1213 AAGGGCGAGGTGCTGGGTGATGTCTTGCAGCTGGAAACCTTGAAGCAAGA 126
355AlaLeuLysSerArgPheLysT 362
362 yrPheGluSerAspHisLeuGlySerGly 371 :::   ::::::: 1313 TGCTGGAGCTGAGCGAGGCCAGCAGGAAGCCAAGCTGCTGCTGAGCGG 136
372 SerHisPheArgLysGluAspMetLeuLeuLysGln

1 630 R 2252	614 AlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnGl        :::      :::       ::::
o 613 G 2220	597 etGluGlyGlnLeuLysAspLeuSerAlaLysLeuAlaLeuSerIlePro :::          ::: ::    2186 TGGAAGAGCAGCGTTGTATCTCT
м 597 : С 2185	582 tCysGluLeuGluArgGluLysArgGlyArgLysLeuThrGluM :
e 582 : T 2138	566 GluGlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMe ::: :::   ::::   ::: 2089 AAGGACCAGCTCCAGGAGCAGCTCCAGGCCCTCAAAGAGTCCTTGAAGGT
p 565 : G 2088	552 leLysGlnAsnGluMetLeuValGluGluPheLysArg
I 552 C 2038	535 sVaiLysTyrGluGlyAlaSerAlaGluValGlyLysLeuArgAsnGlnI : :::
y 535 : G 1988	521HisArgLeuMetGluGluLeuLysAspGlnLeuLysAspMetLy
. 520 A 1938	513 hrSerAspAlaAlaThrGlyAsn
r 513 : 3 1888	496 yLysValLysGlnMetGlnThrHisPheLeuAlaLeuLysGluHisLeuT
<b>4</b> 4	480 LeuGluAspAlaLeuLysAspValGlnLysArgMetTyrGluSerGluGl :::         :::::::: 1795 CGGGATGCGGCTCTCAAGCAGCTGGAGGCACTGGAGAAGGAGAAGGCTGC
17	474 spGluGlnlleLysGln :::    1745 CCCAGCAACTGGCCACTGCTGCAGAGGGGGAGAGGCCTCCTTAAGGGAG
1744	457 aGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSerA :::    :::   :::      ::::::::    1695 GCAGTTGAAGGAGGTAGCGGAGAAGCAGGAGGCAACTAGGCAGGACCATG
4 4	441 AlaLysGlnAspArgLeuLysLeuGlnAsnGluLeuAlaHisLysValAl 
1656	424 snGluIleLeuLysLysGluLeuGluAlaMetArgThrPheCysAspSer ::     :::::::::::::::::::::::::::::::
1612	407 tLeuArgProLeuGluLeuAlaLeuProAsmGlnAlaSerTyrSerGluA ;;
1562	391 SerGlnCysThrSerThrGlyMetProValHisMetGlnSerArgSerMe    :::    ::: ::::::::::::::::::::::::
1512	384GlyGlnMetTyrMetThrAsp::::   :::   :::  1463 CCTCCCAGGCTCATGGGGCCCGGTTGACTGCCCAGGTGGCCTCTCTGACC
_	TCTCCAACCTCAGCC
383	383
1412	1363 GGCCACTTCGAAGAAGAAAGCAGCAGCTGTCTAGCCTGATCACTGACCT

63	0 uLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeuA 64	7
2253	GCGGGAACGAAAGGAGCTGGAAGAAGAGAGGGCTGGGCGCA	02
2303	SHGluThrargPro 65	t 1
652	LeuLysArgGluLeuGluAsnLeuLysAlaLysLeuAlaGlnHisValLy	æ ∣
2353	CTGCGGCGGGAGCTGGCAGAGGCCATGGCTGCCCAGCACACACAC	96
Ó	sProGluGluH1sGluGlnLeuLysSerA	Ф
2397	TGAGAGTGAGTGAGCTCGTCAAAGAAGTAGCTGCCTGGCGT	46
680	GluGlnLysSerGlyGluLeuGly	1
2447	GGTATGAGGATAGCCAGCAAGAGGAGGCACAGTATGGCGCCATC	96
692	GluLeuThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysVa	80
2497	GAACAGCTGATGACTTTGAAGGAGGAATGTGAGAAGGCCCG 25	37
708	sLeuAspAsnLysLeuLeuThrGlnGlnValAsnAsnLeuThrThrGlum 72	U
2538	CCAGGAGCTGCAGGAGGCAAAGGAAGGTGGCAGGCATAGAATCCCACA 2	587
725	etLysAsnValProLeuLysValSerGluGluMetLys	_
2588	GCGAG	19
74	VallleValAspAspLeuAsnLysLysLeuSerAspValThrHisLysTy 75	80
758	Throlulystystenclinatty:	63
2664	:::::::::::::::::::::::::::::::	13
769	etGluAsnAlaSerLeuSerLysAsnValSe	_
2714	TGCAGGAAAAGATGGCTGCCACCAGCAAAGAGGTGGCCCGCTTGGAGACC 276	ω
785	ValPhe	-
64	Ċ	ίω
787	IleProProGluArgHisGluLys	<u>.</u>
2814	GCGAGGGCAGGAGACAGCCCGAGTGGCTG	ũ
795	MetMetAlaLeuL	_
2864	ACGCCAGTTCTGCAGCACACA	ω
801	IleThrGluLeuLysLysGlnLeuSerGluLe	
2914	GGG	ω
814	snLysLysCysGlyGluAspGlnGlu	
2964	GATGGAGAGCCAGGGAGCAGCAGGAGGGGGCGTGGGCAGCAAGAGGG 301	ω
823	erLeuMetSerGluAsnA	
3014	TGGCGCGGCTGACCCAGC	ω
833		
3064	CTGGAGAAGGCGGCCAGAGCAGAGCTTGAGATGCGGCTGCAGAACGCCCT 3113	ىد

078	1062 rThrGluAlaLysLysGluLysGluLysLeuValGluGluAsnAlaL 1	
062	1046 ArgLysThrGluGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTy 1 ::::::::         :::::::	
045	029 spLysAsnValHisIleGluAsnSerTyrGluThrGluArgAlaLeuSer 1 ::::::	
1907	858 AGCTCTGCTGCGGGAGGAGGTGCAGAGCCTCCGGGAGGGA	
1023	07 LysLysCysLysGlnGluAsnAspLysLeuLysLysGluIleLeuThrLe 1 08 GCCTGCTGCAGGCAGAGACAGCCAGCAACAGTGCCAGAGCTGCAGAACGC 3	
1006	990 luGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGluGluAla 1 ::::::::::::::::::::::::::::::::::::	
990 3757	08	
976 3707	65LysLeuLysTyrAlaProIleIleSerLeuGluGlu	
3657	08 6	
3607	58 CTCGGCCCAACGGGAGTTGGCTGCCTTCCGCACCAAGGTACAAGACCACA	
951 3557	euHisGluGluIleAl :::::: GTCAGAGTGCCTTAGC	
93 <b>4</b> 3507	25 alGlnAspasnSeralaGlu	
925 3457	09 .ArgGluHisGluGluLysMetSerGlyLeuArgLysSerMetLysLysV	
908 3407	01ValLysAlaGluTyrIleSerLeu	
900 3357	### IMASHGIN	
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881 3263	-	
870 3213	55 euSerSerThrLeuAspLysThrAsnArgGluLeuValAspValLys :::::      ::::::::::::::::::::::::	
855 3163	3114 CAACGAGCAGCGTGTGGAGTTCGCTACCCTGCAAGAGGCACTGGCTCATG	

1243 4654 1256 4704 1267 1267 4754 4754 4804	4440 1176 4490 1193 4540 1209 4573 1226	1124 4240 1137 4290 1149 1154 4340 1154 4390	4008   1078 1078 4058   1092 4108 1099 1116 1116
243 GIUVALICUHISATALYSLYSLYSCHULCUSCERATA :::	440 GGCAGCCGTACGTGCTGATGCTGAGACCCGTCTGGCTGAGG  176 luSerGlnAsnLysThrGluGluValSerLysLeuGlnSer	124CysTyrGluLysGluGlnGlnThrValThrGlnLeuAr ::::::::::::::::::::::::::::::::::::	### CTGCAGAAAGAGCAGGCCTCTCCACCTGCAGCTGAGCTG
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G 4703  . 1266  . 1274  u 1274  l 1291  l 1291  A 4853  A 1853	119 119 453 120 120 457 122 461 124	113 428 114 433 115 438 438 116	4057 1091 4107 1099 4151 1116 4189 1123

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seq_documentation_block:
    Sequence 3, Application PC/TUS9306160
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PCT-US93-06160-3
                                                                                                                                                                                                                                                                                                                                                                              ATTORREY/ACENT INFORMATION:

NAME: PITCHER ESQ, EDMUND R
REGISTRATION NUMBER: 27,829
REFERENCE/DOCKET NUMBER: MTP-(
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/248-7000
TELEPAS: 617/248-7100
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 6306 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1306 luLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSer 1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5027 CAGACCAGCAGCTTCGAGACCTG 5049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1356 laAspArgGlnHisGlnGluVal 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4977 CCGCCACCTTACTGCCCAGGTGCGCAGGCTGGAGGCACAGGTTGCCCATG 5026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4939 ......CAGGCTGGGCTGAAGACCAAGGAGGCTGAACAGACCTG 4976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1323 GlnLeuThrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuIl 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4854 GGAGCAGCTGCGGAGCCTGGAGCAGCTGCAGAAGGAAAACAAA......G 4897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Flopy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/06160
FILING DATE: 1930621
CLASSIFICATION:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: NOVEL MALIGNANT CEI
TITLE OF INVENTION: INTERIOR NUCLEAR WI
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: TESTA HURWITZ & THIBEAULT
STREET: 53 STATE STREET
                                                                                        LOCATION: 1.6306

PUBLICATION INFORMATION:
AUTHORS: COMPTON, DUANE A
AUTHORS: SZILAK, ILLYA
AUTHORS: CLEVELAND, DON W
TITLE: PRIMARY STRUCTURE OF OF NUMA, AN INTRANUCLEAR
TITLE: PROTEIN THAT DEFINES A NOVEL PATHMAY FOR
TITLE: SEGREGATION OF PROTEINS AT MITOSIS
JOURNAL: JOURNAL OF CELL BIOLOGY
                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: FEATURE:
               JOURNAL: JOURNAL C
VOLUME: 116
VAGES: 1395-1408
DATE: MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 53 STATE: MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: U
ZIP: 02109
                                                                                                                                                                                                                                                                                                               NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                               linear
E: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOVEL MALIGNANT CELL TYPE MARKERS OF THE INTERIOR NUCLEAR MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MTP-013
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lignment_scores:     Quality:     Ratio: Percent Similarity:	cores: Quality: 512.00 Length: 1541 Ratio: 0.660 Gaps: 61 milarity: 50.357 Percent Identity: 20.052	
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234 AspI1     775 GACCG	0 1	
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263 875 TGCAT	> ⋅	
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seq_documentation_block:

Sequence 54, Application US/08592126

Patent No. 5821091

GENERAL INFORMATION:

APPLICANT: Gregory Dolganov

TITLE OF INVENTION: Transcripts Enc

TITLE OF INVENTION: Polypeptides
                                                                                                                      ; NAME/KEY:
; LOCATION:
US-08-592-126-54
                                       alignment_scores:
Quality:
                                                                                                                                                                                                         CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
REGISTRATION UNUBER: 38,615
REFERENCE/DOCKET NUMBER: 4600-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0960
INFORMATION FOR SEQ ID NO: 54:
SEQUENCE CHARACTERISTICS:
LENGTH: 5893 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: CONA to mRNA
HYPOTHETICAL: NO
ORIGINAL SOURCE:
TENTATOR FOR SEG
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    Percent Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1306 luLeuLeuAsnAspValGluArgLeuLysGlnAlaLeuAsnGlyLeuSer 1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/592,126
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1356 laAspArgGlnHisGlnGluVal 1363
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Dehlir
STREET: 350 Cambr
CITY: Palo Alto
                                                                                                                                                                                                 INDIVIDUAL ISOLATE: Rad50.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..........CAGGCTGGGCTGAAGACCAAGGAGGCTGAACAGACCTG 4976
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                      Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Dehlinger & Associates
350 Cambridge Avenue, Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
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389..4324
477.00
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Length: 1421
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Percent Identity: 22.097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4600-0111
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allgnment\_block: US-09-750-590-2 x US-08-592-126-54 Align seg 1/1 to: US-08-592-126-54 1104 AAATTGTCAAATCCTATGAGAATGAACTTGATCCATTGAAGAATCGTCTA 1153 1055 1198 TGAAATTAAAGCCTTGGATAGCCGAAAGAAGCAAATGGAGAAAGATAAT. 1246 1016 CTAAAATATCTGAAGCAATATAAGGAAAAAGCTTGTGAG........ 1054 137 583 ATTTGTACACGATCCCAAGGTTGCTCAAGAAACAGATGTGAGAGCCCAGA 632 123 rAlaLeuHisAspAlaAlaMetAla.....AspCysProSerSerI 137 ||||:::||| || ||:::||| ||:::|| ||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::|||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::||:::|:::||:::|:::||:::|:::|::||:::|:::||:::||:::|:::|:::||:::|::|:::||:::|:::|:::||:::|:::|:::|:::|:::|:::| 323 etValAlaAspAspLeuGluSerGluLysGluLysLeuLysSerLeuLeu 339 659 633 916 878 840 TAAATAATGTCATTTTCTGTCATCAAGAAGATTCTAAT......... 877 790 AGAAATTGACCGAGAAATGATCAGTTCTCTTGGGGTTTCCAAGGCTGTGC 220 yH1s...AspSerSerTyrTyrAlaArgIleGlyAspAsnLeuAspIleL 236 740 187 694 T....ACTCAGAAAAGCA 707 170 108 LeuGlnTyrAsnCysProThrGluH1s...ValAspLeuGlnGlyArgTh 123 351 gThrIleGluAlaLeuLysSerArgPheLysTyrPheCluSerAspHisL 368 966 276 268 252 LeuTrpLysLysGlyProSerLeuGlnGlnArgAsnLeuSerGlnMetLe 236 204 GluValLeuIleLysAsnGlyAlaAspValThrLeuLeuAspAlaLeuGl 220 708 AAAAGACA......GAATTTAAAACTCTGGAAGGAGTC 154 GlyArgThrProLeuValLeuAlaThrGlnMetCysArgProThrIleCy 170 snArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysLysAspAlaVal 203 sGlnLeuLeuIleAspArgGlyAlaAspIleAsnSerArgAspLysGlnA 187 GGAGAA.....CTTATAGCTGTGCAA....AGATCTATGGTGTG 693 leGlnLeuCysAspHisGlyAlaSerValAsnAlaLysAspValAsp 153 TTCGTCTG......CAATTTCGTGATGTCAAT 658 AsnGluAspLeuLysGluArgLeuArgLysIleGlnGlnGluGlnArgIl 306 eu...ThrLeuLeuLysThrAlaSerGluAsnSerAsnLysGlyArgGlu 251 AlaAlaLysGluLysGlnHisGluGluSerLeu.....Ar 351 .ATTCGTGATCAGATTACAAGTAAGGAAGCCCAGTTAACATCTTCAAAGG 1103 eLeuLeuAspLysValAsnGlyLeuGlnLeuGlnLeuAsnGluGluValM 323 GGCAGGTACGTCAGACAAGGTCAGAAAGTAAAAGAATATCAAATGGAA .....AsnGlnArgGluH1sGlnAsnIleGlnAspLeuGluIleGlu 289 TGATGAGATTTTTTCAGCAACAAGATACATTAAAGCCTTAGAAACACTTC 965 uAspGluValAsnThrLysSer..... ...TGG.....CCTTTAAGTGAAGGAAAGGCTTTGAAGCAAAAGTT 915 ATTACTAGAACAAAGCATGGTGAAAAGGTCAGTCTGAGCTCTAAGTGTGC AAAGAAATTGAACATAATCTCTCTAAAATAATGAAACTTGACAA 1197 from: 1 to: 5893 1015 275 268 839 789 739

613 roAlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLe	596 uMetGluGlyGlnLeuLysAspLeuSerAlaLysLeuAlaLeuSer 	583 CysGluLeuGluArgGluLysArgGlyArgLysLeuThrG	566 luGlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluLeuSerMet :::   ::::   :::	557 tLeuValGluGluPheLysArgAspG	ຄິດສີ	536Gluglyala 	519 yAsnHisargLeuMetGluGluLeuLysAspGlnLeuLysAspMetLys.	510 GluHisLeuThrSerAspAlaAlaThrG1	rHisPheLeuAla ::: : ::   GAATGACTTTGC/	476 nIleLysGlnLeuGluAspAlaLeuLysAspValGlnLysArgMet          :::::::	473SeraspGlv	PCCGAGCTAGAGATTCATTAA	451 uLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluCysG   :::::	435 ArgThrPheCysAspSerAlaLysGlnAspArgLeuLysLeuGlnAs	418 lnAlaSerTyrSerGluAsnGluIleLeuLysLysGluLeuGluAla    :::      :::::::: 1323 aGAGAACAGTAAGGGAGAAAGAAAGGAAATTGGTAGACTGT	401 sMetGlnSerArgSerMetLeuArgProLeuGluLeuAlaLeuProA :::    1304GACTTATATCACAATC	385 GlnMetTyrMetThrAspSerGlnCysThrSerThrGlyMetProVal       :::    ::: 1286ACTGATGAGCAACTAAAT	8 euGlySerGlySerHisPheArglySGluAspMetLeuLeuL     :::::::::::::::::::::::::::::::::
uAsn 629	Tlep 61	ThrG1 596    :: CGTACCCA 1998	GTAAA 1948	rgAspG 566 ::: rGGAAG 1898	lume 557 :: GTGA 1848	yAla 541  :::  ATCT 1798	Lys. 535     AAGC 1748	hrG1 519       CTGG 1701	ALeuLys 509	TyrG 493	luG1 476 :::   \GACA 1563	472 GGCA 1513	GluA 468 :::  GATC 1463	.snG1 451 ::   :AGGA 1413	вмеt 434 : ТСАТ 1366	AsnG 418 :::  CACC 1322	alH1 401	8=7

891	875 spileAsnGlnGluPheValLysIleLysAspGluAsnGluIleLeuLys {	
875 2846	867 laspvallyslyscysGlu	80 27
867 2796	853 ThrAlaLeuSerSerThrLeuAspLysThrAsnArgGluLeuVa :::::   :::               747 GTATGCCTGACAGATGTTACAATTATGGAGAGGTTCCAGATGGAACTTAA	8! 27.
852 2746	836 ysThrMetSerHisGlnTyrValProValLysThrHisGluGluIleLys :: :::	55 89 65 89
836 2696	819 uAspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAspLeuLysL	26 8
819 2655	804 ThrGluLeuLysLysGlnLeuSerGluLeuAsnLysLysCysGlyGl :::          :::::      ::::    : 606 ATTGATTTGAAGGAGAAGGAAATACCAGAATTAAGAAACAAAC	26. as
803 2605	790 luArgHisGluLysGluMetMetAlaLeuLysSerAsnIle	7 25
790 2555	773 aSerLeuSerLysAsnValSerArgLeuGluThrValPheIleProProG ::::   :::   :::   39 AGAGCTAAAAAAAAAG	7 25
773 2538	757 LysTyrThrGluLysLysLeuGluMetGluLysLeuLeuMetGluAsnAl :::	
756 2503	740 isAspVallleValAspAspLeuAsnLysLysLeuSerAspValThrHis :::::       ::::       472 AAGAAGTCATCAGTGATTTGCAGTCTAAACTG	7 24
740 2471	726 SASnValProLeuLysValSerGluGluMetLysLysSerH ::::         :::	
726 2421	715	7 23
714 2371	700 euGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLeu   :::::	<b>7</b> 23
700 2321	688 sArgile	22 6
688 2271	673GluGlnLeuLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLy :::::	22 6
672 2221	657 luAsnLeuLysAlaLysLeuAlaGlnHisValLysProGluGluHis :::   :: :::   :: 2172 CCAAATTGAACAAGGAACTAGCTTCATCTGAGCAGAATAAAAATCATATA	21
657 2171	640 gGluTyrGluArgSerLeuAsnGluThrArgProLeuLysArgGluLeuG :::: ::::::::::   :::        2131 TAGTAAATCAAAAGAAATTAATCAGACCAGGGACAGACTTG	21
640 2130	630 Glu	20
2080	::::	20

1150 laGluHisLeuGlnValLysGluAlaPheGluLysGluValG ::::: 3615 GGCGACAGAAAGGTTATGAAGAAGAATTA	1138 tLeuGluAsn	1125 TyrGluLysGluGlnGlnThrValThrGlnLeuArgGln	1113 hrLeuLysGluGluLeuLys	1098 uGlnValGluSerLeuLysLysSerLeuSerGlyThrIleGluT ::::::::::::::::::    ::::::     ::::::	1082 GluIleLeuAlaAlaGlnThrLeuLeuGlnLysGlnHisValProLe	1065 lalyslysGlulysGlulysLeuValGluGluAs ::::   :::          :: 3357 GCGAGAAACACAAAGAAAAGATAAATGAAGAT	1048 rGluGluLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTyrThrG :::    :::    3313 AAAAGAAACTGAACTTAATAAAGTAATAGCTCAACTAAGTG	1034IleGluAsnSerTyrGluThrGluArgAlaLeuSerArgLysT	1022 hrLeuGlnLysAspLeuLysAspLysAsnValHis	1005 uAlaLysLysCysLysGlnGluAsnAspLysLeuLys     :::     ::: 3205 AGCACAGGATAAACTG	989 LysGluGlnLeuSerGlnGlnThrGlnLysTyrAsnThrSerG:::	972 leSerLeuGluGluCysGluArgLysPheLysAlaThrGluLysGluLeu         	955 gGluLeuAspThrIleGlnGluCys     ::: ::!   3097 AGAGATAAAGGATGCTAAAGAG	939 SerGinGluGluIleValThrLeuH :::   :::	925 alGlnAspAsnSerAlaGluIle ::::::::::::::::::::::::::::::::::	908 uArgGluHisGluGluLysMetSer ::::::::   :::   :::::: 2947 ACAGGACCAGCAGGAACAGATTCAA	2897 CACAAGTTAGACACAGTTTCTAGTA
ysGluAlaPheGluLysGluValGlyIleIle 1166 :::::::::::::   :::   ::: AGAAAGGTTATGAAGAAGAAATTATTCATTTT 3652	GlnLysAsnSerSerValProLeuA 1150	hrGlnLeuArgGlnMe 1138     ::::::	ThrLysGlnArgCys 1124	LysSerLeuSerGlyThrIleGluT 1113 :::       ::::: GATAACCTTACTTTAAGAA 3464	euGlnLysGlnHisValProLeuGl 1098   :::::    :::  CATGAGACAAGATATTGATACACA 3420	lGluGluAsnAlaLysGlnThrSer 1081    ::: TGAAGAT3388	AspLeuLeuGlnLysTyrThrGluA 1065 ::::::::::::::::::::::::::::::::::::	hrGluArgAlaLeuSerArgLysTh 1048 ::: ATGGGAAAGACGACTATAAGAAGCA 3312	LysAsnValHis 1033        :::     GGTTAAAAATATTCATGGCTATATG 3262	AspLysLeuLysLysGluIleLeuT 1022 	lnLysTyrAsnThrSerGluGluGl 1005 	sPheLysAlaThrGluLysGluLeu 988      ::: 	ysīleLysLeuLysTyrAlaProīleī 972	SerGlnGluGluIleValThrLeuHisGluGluIleAlaAlaGlnLysAr 955 :::   :::	LeuAlaLysTyrLysLys 938      ::: :::::::::::::::::::::::::::::	uArgCluHisGluGluLysMetSerGlyLeuArgLysSerMetLysLysV 925 ::::::::::::::::::::::::::::::::::::	ArgAsnLeuGluAsnThrGlnAsnGlnValLysAlaGluTyrIleSerLe 908 :::::   :::::::::::::::::::::::::::::

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seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-687-080-44
                                                                                                                                                                                                                                                                                    Sequence 44, Application US/08687080 Patent No. 5965427
                                                                                                                           GENERAL INFORMATION:
APPLICANT: Gregory Dolganov
TITLE OF INVENTION: Human RAD50 Gene and Methods of Use Thereof
NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1283
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3703 AGAAATGATGATTGTTATGAGGACAACAGAACTTGTGAACAAGGATCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3653 AAGAAAGAACTTCGAGAACCACAATTTCGGGATGCTGAGGAAAAGTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1344 GlnGlnValArgSerLeuGlnGlnLeuAlaAspAlaAspArgGlnHi 1360
                                                                            ADDRESSEE: Dehlinger ...... Suite STREET: 350 Cambridge Avenue, Suite
COUNTRY: USA
ZIP: 94306
                                                 STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InSerGluIleGlnAsnThrLysGlnAlaLeuLysLysLeuGluThrArg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTGGAGCTTTTA 4219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sGlnGluValile 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pValGluArgLeuLysGlnAlaLeuAsnGlyLeuSerGlnLeuThrTyrG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGGCATCATTGCCTTGGATGAGCCAACAACAATCTTGACCGAGAAAA 4110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            leThrGluLeuGlnArgArgIleGlnGluSerAlaLys...... 1295
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaLysAspGluLysGluLeuLeuHisPheSerIle......Gl 1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATAGAAATACGGTCTGATGCC......GATGAAAATGTATCA 3910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         yrGluGluValCysGluGluValLeuHisAlaLysLysLysGluLeuSer 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rGlnIleSerAspLeu...AsnGluLysLeuAlaAsnLeuAsnArgLysT 1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATATTTATTATAAGACTCTTGACCAAGCAATAATGAAATTTCACAGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCAG...CGTAACTTCCAGCTTCTGGTAATCACTCATGATGAAGATTT 4206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lySerGlySerProSerLysArgGlnSerGlnLeuIleAspSerLeuGln 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATTGAATCTCTTGCACATGCTCTG......4135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCCTCACTCATTCGCCTGGCCCTGGCTGAAACGTTCTGCCTCAAC 4060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACACAGCCTTGGATATGCGAGGACGATGCAGTGCTGGACAAAAGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTTCTGATAAAAGGCGGAATTATAACTACCGAGTGGTGATGCTGAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ...GlnIleGluAlaLysAspAsnLysIleThrGluLeu...LeuAsnAs 1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ....ATACGTGACCTGTGGCGAAGTACCTATCGTGGACAAGATATTGAAT 3872
                                                                         Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ....GTTGAGATAATAAAAAGTCGCTCA
                                                                                                          250
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alignment_block:
US-09-750-590-2 x US-08-687-080-44
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: US-08-687-080-44 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (415) 324-0960 INFORMATION FOR SEQ ID NO: '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 26-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: C
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                                                                                       583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                108 LeuGlnTyrAsnCysProThrGluHis...ValAspLeuGlnGlyArgTh 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 5893 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 4600-0111.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
                                                                                                                                                                                                                         170 sGlnLeuLeuIleAspArgGlyAlaAspIleAsnSerArgAspLysGlnA 187
                                                                                                                                                                                                                                                                     659
                                                                                                                                                                                                                                                                                                                                            633
                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 rAlaLeuHisAspAlaAlaMetAla.....AspCysProSerSerI 137
                                       740
                                                                           204
                                                                                                                                                      187
                                                                                                                                                                                     694 T.....ACTCAGAAAAGCA
                                                                                                                                                                                                                                                                                                  154 GlyArgThrProLeuValLeuAlaThrGlnMetCysArgProThrIleCy 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                533 CTAAAATATATTTGTACTGGAGATTTCCCTCCTGGAACCAAAGGAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 17-JUI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                     GluValLeuIleLysAsnGlyAlaAspValThrLeuLeuAspAlaLeuGl 220
                                                                                                                  AAAAGACA....
                                                                                                                                                snArgThrAlaLeuMetLeuGlyCysGluTyrGlyCysLysAspAlaVal 203
                                                                                                                                                                                                                                                                                                                                                                         leGlnLeuLeuCysAspHisGlyAlaSerValAsnAlaLysAspValAsp 153
yHis...AspSerSerTyrTyrAlaArgIleGlyAspAsnLeuAspIleL 236
                                       ATTACTAGAACAAAGCATGGTGAAAAGGTCAGTCTGAGCTCTAAGTGTGC
                                                                                                                                                                                                                                                                     GGAGAA......CTTATAGCTGTGCAA.....AGATCTATGGTGTG
                                                                                                                                                                                                                                                                                                                                      TTCGTCTG......CAATTTCGTGATGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ratio:
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                                                                                                                  .....GAATTTAAAACTCTGGAAGGAGTC
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Gaps:
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493	6 nIleLysGlnLeuGluAspAlaLeuLysAspValGlnLysArgMetTyrG	47
1563	4 ACACAGCTAGAATTGGATGGCTTTGAGCGTGGACCATTCAGTGAAAGACA	151
476	3SerAspGluGl	47:
1513		146
472	8 rgValLysGluAsp	46
468 1463	. uLeuAlaHisLysValAlaGluCysLysAlaLeuAlaLeuGluCysGluA	451 1414
		60 1
1366	S ASSEMBLE DESCRIPTION OF A SECTION OF A SEC	1 2 2
34	8 lnAlaSerTyrSerGluAsnGluIleLeuLysLysGluLeuGluAlaMet	- A
1322	:::    	130,
418	1 sMetGlnSerArgSerMetLeuArgProLeuGluLeuAlaLeuProAsnG	40
1303	6ACTGATGAGCAACTAAAT	8
401	5 GlnMetTyrMetThrAspSerGlnCysThrSerThrGlyMetProValHi	385
1285	7AGTGAACTGGAAGAGAAATGGAAAAGGTTTTCAAGGG	4
384	8 euGlySerGlySerHisPheArgLysGluAspMetLeuLeuLysGlnGly	360
368 1246	1 gThrileGluAlaLeuLysSerArgPheLysTyrPheGluSerAspHisL :    :::                  :::   ::: 8 TGAAATTAAAGCCTTGGATAGCCGAAAGAAGCAAATGGAGAAAGATAAT.	35; 119
$\vdash$	4AAAGAAATTGAACATAATCTCTCTCTAAAATAATGAAACTTGACAA	i,
351	0 AlaAlaLysGluLysGlnHisGluGluSerLeuAr	340
339 1153	3 etValalaaspAspLeuGluSerGluLysGluLysLeuLysSerLeuLeu ::::::     :::    4 AAATTGTCAAATCCTATGAGAATGAACTTGATCCATTGAAGAATCGTCTA	32: 110
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323	6 eLeuLeuAspLysValAsnGlyLeuGlnLeuGlnLeuAsnGluGluValM	306
0	G CTAAAATATCTGAAGCAATATAAGGAAAAAGCTTGTGAG	μ̈ ,
9	O AsnGluAspLeuLvsGluArgLeuArgLvsTleGlnGlnGlnGlnArgTl	٥
1015	GGCAGGTACGTCAGACACAAGGTCAGAAAGTAAAAGAATATCAAATGGAA	966
0 0	6	<b>J</b> +
7	8 uAspGluValAsnThrLysSer	268
915	8TGGCCTTTAAGTGAAGGAAAGGCTTTGAAGCAAAAGTT	7
268	2 LeuTrplysLysGlyProSerLeuGlnGlnArgAsnLeuSerGlnMetLe	5
877	TAAATAATGTCATTTCTGTCATCAAGAAGATTCTAAT	840
251	6 euThrLeuLeuLysThrAlaSerGluAsnSerAsnLysGlyArgGlu	236
839	0 AGAAATTGACCGAGAAATGATCAGTTCTCTTGGGGTTTCCAAGGCTGTGC	790

493 luSerGluGlyLySvalLySGlnMetGlnThrHISPheLeuAlaLeuLyS 502 langedGAACAAAAACTGCCCAACCAACCAATGAATGACTTGACGAAAAA 503 langedGAACAAAAACTGCCCAACCAACCAATGAATGACTTGACGAAAAA 510 GluHisLeuThrSer	1564	GATTAAAAATTTTCACAAACTTGTGAGAGAGAGACAA	_
GluHisLeuThrSer	493 1602	-	_
ACTIGGAACCTCIGAAACCAAAACCAGATAGATAGAGATAAGAAATAGAAAATGGG 170  yAsniisargleunetGluGluLeuLysAspGinLeuLysAspMetLys 111  ACTIGGAAAATATT GAGTTAAAAATCCTAAGAAATCGG 170  LIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	510	AspAlaAlaThrGl	
YASHHISATGLEUMETGIUGIULEULYSASPGINLEULYSASPMETLYS. 535   ACTGGGAAGAATAATTGGTTTAAAATCCAGAAATCCATAAGTACAGACAGC	1652	ATGAGATAAGAGATAAGAAAACTGG 1	همو
CUTGGGAAGATTATT:GAGTTAAAATCAGAAATCCTAAGTAGAAGC 14  AGAATGAGCTGAAAAATGTGAAATGTAGAAGTATTACAGCAGTTGGAAGGATCT 179  SeralaGluvalGlyLysLeuArgAsnGlnIleLysGlnAsnGluMe 557  III :::::::::::::::::::::::::::::::::	519	. 535	3
	536	a 541	•
542 SeralaGluvalGlyLysLeuArgAsnGlnIleLysGlnAsnGluMe 557 [	1749	  AATGAGCTGAAAAATGTGAAGTATGAATTACAGCAGTTGGAAGGATCT 179	8
799 TCAGACAGGATTCTTGAACTGACCAGGAGCTCATAAAAGCTGAAACGTGA 184 557 tLeu	542	557	
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### TAATAAGTCTCCAAAATGAAAAGCAGACTTAGCAGACCAGGACTTAGCACAGCACCAGACTTAGCACAGCACCAGACCTAGCACAAATGAAAAGCAAGACCAGACCTAGCAGACCCGGCGTAAA 194 #### PAATAAGTCTCCAAAATGAAAAGCAGACCATACAAACACACCATACCAAACACCCCAGCAAAATGAAAAGCAAGACACCATCATACAACACACCATCCCAAAATGAAAAAAGCAAGAAAAAAAA	557 1849	566 189	80
899 TAATAAGTCTCCAAAATGAAAAAGCAGACCTÄGGACCCTGCGTAAA 194 583 CYSGLULEUGLUATGGLULYSATGGLYATGLYSLEUThrG1 596 11	σ	LTI	
583 CysGluLeuGluArgGluLysArgGlyArgLysLeuThrGl 596 :::	89		8
596 UMETGIUGIYGInLeuLysAspLeuSerAlaLysLeuAlaLeuSerIleP 613 596 WATGGACATGCTGACCAAAGACAAAGCTGACAAAA	9 5 8		<b>x</b>
### ### ##############################	596		
613 roalaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsn 629    ::::::::        033GATGAACAAATCAGAAAAATCAGAACACACACGCTGATGAATTAACC 208    :::	1999		N
630 GluLysAlaLysLysLeuIleAspValGluAr 640  630 GluLysAlaLysLysLeuIleAspValGluAr 640  1081 TCACTGTTGGGATATTTTCCCAACAAAAACAGCTTGAAGACTGGCTACA 213  640 gGluTyGluArgSerLeuAsnGluThrArgProLeuLysArgGluLeuG 657  131 TAGTAAATCAAAAGAAATTAATCAGACCAGGGACAGACTTG 213  657 luAsnLeuLysAlaLysLeuAlaGlnH1sValLysProGluGluH1s 672  132 CCAAATTGAACAAGGAACTAGCTTCATCTGAGCAGAAAAATCATATA 222  657GluGlnLeuLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLy 688  111	613	ი დ. ე ⊐	>
081 TCACTGTTGGGATATTTTCCCAACAAAAACAGCTTGAAGACTGGCTACA 213 640 GGLUTYFGLUARTGSETLEUASNGLUTHRATGPTOLEULYSATGGLULEUG 657 131 TAGTAAATCAAAAAAAATCAATCAGACCAGGACAGACTTG 217 132 TAGTAAATCAAAAAAAATCAATCAGACCAGGACAGACTTG 217 133 TAGTAAATCAAAAAAAAAATCATTAATCAGACCAGGACAGACTTG 217 134 TAGTAAATCAAAAAAAATCAATCATTAATCAGACCAGGACAGACTTG 217 137 CCAAATTGAACCAAGGAACTTAATCATATA 227 137 CCAAATTGAACAAAAAAAAAAAAAAAAAAAAAAAAAAAA	630	н б	
640 gGluTyrGluArgSerLeuAsnGuThrArgProLeuLysArgGluLeuG 657 ::::::::::::::::::::::::::::::::::::	2081	: A 21	0
131 TAGTAAATCAAAAGAAATTAATCAGACCAGGGACAGACTTG 217 657 luAsnLeuLysAlaLysLeuAlaGlnH18valLysProGluGluHis 672 :::   ::::::      :::::::	640	65	
657 luAsnleuLysAlaLysLeuAlaGlnHisValLysProGluGluHis 672 :::   :::::    :::::::     :::::::	2131	21	1
673GluGlnLeuLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLy 688	65 17	67 ATA 22	_
222 AATAATGAACTAAAAGAAAGAAAGGAAGACCAACCAACAACAACAACAACA	673	lnLeuLysSerArgLeuGluGlnLysSerGlyGluLeuGlyLy 68	
688 sArgile	N	NACTAAAAAGAAAGGAAGAGCAGTTGTCCAGTTACGAAGACAA 22	1
700 euGlnLysGluIleGluLysValCysLeuAspAsnLysLeuLeu 714   :::::	N O	ArgIle	
715	700	7	
715ThrGlnGlnValAsnAsnLeuThrThrGluMetLy 7 :::     ::::::	w	CTGGA 23	_
372 GCCACAGCAGTTTACTCCCAGTTCATTACTCAGCTAACAGACGAAAACCA	715		
726 sAsnValProLeuLysValSerGluGluMetLysLysSerH 7: ::: :::: :::: ::::::::::::::::::::	2372	ACAGCAGTTTACTCCCAGTTCATTACTCAGCTAACAGACGAAAACCA 2	تر
	726	ValProLeuLysValSerGluGluMetLysLysSerH	

2472	oValThrHis	n U
75	sTyrThrGluLysLysLeuGluMctGluLysLeuLeuMetGluAsnAl	773
2504	:::       ::     ::	2538
773 2539	erLysAsnValSerArgLeuGluThrValPheIleProProG 	790 2555
790 2556	ysGluMetMetAlaLeuLysSerAsnIle         :::::     ATGAAATGCTGGGACTTGTGCCCATGAGGCAAAGCATA	803 2605
804 2606	nLeuSerGluLeuAsnLysLysCysGlyGl ::::       ::::    AATACCAGAATTAAGAAACAAACTGCAGAA	819 2655
819 2656	yrSerLeuMetSerGluAsnAspAspLeuLysL     :::       :::::  AGCGCCTAAAGAACGACATAGAAG	836 2696
836 2697	MetSerHisGlnTyrValProValLysThrHisGluGluIleLys :::	852 2746
853 2747	ThrLouAspLysThrAsnArgGluLeuVa :	867 2796
867 2797	ACAAGCAGCTAAGCTACAAGGAATAG	875 2846
875 2847	luPheVallysIleLysAspGluAsnGluIleLeuLys ::::::::   ::::: ::: ::::::::::::::::	891 2896
892 2897	uAsnThrGlnAsnGlnValLysAlaGluTyrIleSerLe :::::::::::::::::::::::::::::::::::	908 2946
908 2947	uH18GluGluLysMetSerGlyLeuArgLysSerMetLysLysV :::::::   :::::::::::::::::::::::::::	925 2996
925 2997	laGluTleLeuAlaLysTyrLysLys :::        readataTccactaATTTGCAACGTCGTCAGCAA	938 3046
939 3047	ulleValThrLeuHisGluGluIleAlaAla :                       GACTGTGGAATTATCCACTGAAGTTCAGTCT	355
955 3097	IleGlnGluCysIleLysLeuLysTyrAlaProIleI 	972 3125
972 3126	SerLeuGluGluCysGluArgLysPheLysAlaThrGlu 	)88 )175
989 3176	euSerGlnG	1204
1005 3205	ysCysLysGlnG	1022

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REFERENCE/DOCKET NUMBER: 34,354

REFERENCE/DOCKET NUMBER: 5986/14692-US2

TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 527-7700
TELEPAX: (212) 753-6237

INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3763 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /cgn2_6/ptodata/2/ina/5A_COMB.seq:US-07-792-865D-1
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                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/07/792,865D
FILING DATE: 1991104
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UMBER: PCT/US90/01849
FILING DATE: APFIL 3, 1990
ATTORNEY/AGENT INFORMATION:
NAME: Jackson, Atthur
REGISTRATION NUMBER: 3,354
REGISTRATION NUMBER: 34,354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1344 GlnGlnValArgSerLeuGlnGlnGlnLeuAlaAspAlaAspArgGlnHi 1360
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                                                                           TOPOLOGY: linear TOPOLOGY: linear MOLECULE TYPE: Genomic DNA DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 5.25 inch, 360 Kb storage
COMPUTER: IBM or IBM-compatible
OPERATING SYSTEM: PC/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: John W. Barnwell, Mary W. Galinski,
APPLICANT: Samuel P. Werthelmer
TITLE OF INVENTION: MEROZOITE ANTIGENS LOCALIZED AT
TITLE OF INVENTION: THE APICAL END OF THE PARASITE
                                                                   HYPOTHETICAL: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                         FRAGMENT TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
COUNTRY: HC?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: New York STATE: New Yor
                                                                                                                                                                                       TYPE: NUCLEIC ACID
STRANDEDNESS: doub
ORGANISM: P.vivax
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805 Third Avenue
                                                                                                                                                                                            double
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; FILING DATE:
; PUBLICATION DATE:
; RELEVANT RESIDUES
US-07-792-865D-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_block:
us-09-750-590-2 x us-07-792-865D-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: US-07-792-865D-1 from: 1 to: 3763
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UNITS: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IMMEDIANE SOURCE:
LIBRARY: Lambda gt 11 native P.vivax
LIBRARY: DNA expression library
CLONE: 5.3
                                                                            336
                                                                                                                  207
                                                                                                                                                        319
                                                                                                                                                                                            157
                                                                                                                                                                                                                          304 GlnArgIleLeuLeuAsp...LysValAsnGlyLeuGlnLeuGlnLeuAs 319
                                                                                                                                                                                                                                                                      131 AAGTAGAAGAAGCTCAAATA......CAATAC
                                                                                                                                                                                                                                                                                                            287
                                                                                                                                                                                                                                                                                                                                              270 uValAsnThrLysSerAsnGlnArgGluHisGlnAsnIleGlnAspLeuG 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                               254 LysLysGlyProSerLeuGlnGlnArgAsnLeuSerGlnMetLeuAspGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POSITION IN GENOME:
CHROMOSOME/SEGMENT:
                                                                                                                                                                                                                                                                                                                                                                                                                     70 AAAATGGGAAATACGCTTAAAGAA.....TAGAAAAAATGGATGACGA 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTIFICATION METHOD:
OTHER INFORMATION: This sequence corresponds
OTHER INFORMATION: Figure 1A (sheets 1-4) in
OTHER INFORMATION: application, as filed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CELL TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAP POSITION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANELLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HAPLOTYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOCUMENT NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEVELOPMENTAL STAGE:
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IleGluAlaLeuLysSerArgPheLysTyrPheGluSerAspHisLeuGl 369
                                      ACGAAATT.....AAACAGAAAACGAATGAGTATAAG.....
                                                                          ysSerLeuLeuAlaAlaLysGluLysGlnHisGluGluSerLeuArgThr 352
                                                                                                                                                    nGluGluValMetValAlaAspAspLeuGluSerGluLysGluLysLeuL 336
                                                                                                                                                                                                                                                                                                      luIleGluAsnGluAspLeuLysGluArgLeuArgLysIleGlnGlnGlu 303
                                                                                                                AAAGTCCAAAATTGTGATGGAAAAAATCGAATTATATAAAAAAAGAAATTG 256
                                                                                                                                                                                            Quality:
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0.698
51.077
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                                          288
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613	uGlyGlnLeuLysAspLeuSerAlaLysLeuAl	597
1 9	uSerMetCy8GluLeuGluArgGluLy8ArgGlyArgLysLeuThrGlu 	7
10	::::::::::::::::::::::::::::::::::	47
580	GluGlyLysLeuMetGluGluAsnLysArgLeuGlnLysGluL	
565		565 997
996	TCTGAACAATACTTAAAAGATATAGAAGACGCAGAAAAACAAGCT	947
565	tLeuValGluGluPheLysArgAsp	
946	ATTCGAATAAGGTTAACATTAATGAAATAAATGAAATATAA	903
557	AlaSerAlaGluValGlyLysLeuArgAsmGlnIleLysGlnAsmGluM	
0	AAATTGAGTTCTTGGAAAAATTTAAGCCTAATGAGGAAAG	
• (	GluGluLeuLysAspGlnLeuLysAspMetLysValLysTyrGluGl	
	ATATAAAGACAAATGCACAAACCGAAATCAGT AATTCAAAAAGA	ò
л О	aLeuLvsGluHisLeuThrSerAspalaAlaThrGlvaspHisArgfen	Ö
808	TAAATCCTATTTAAGTGAAATAAAAG	
507	MetTyrGluSerGluGlyLysValLysGlnMetGlnThrHisPheLeuA	
490 758	GlnLysAr ::::::: AATCGTGA	474 709
708	AACAATATTGACATAGCTTTAGAA	683
473	luCysGluArgValLysGluAspSer	462
682	::::::          TATTGCAAAGAGTGGCAGCTATGATAGAAGAGGCAAAGGCACATA	633
461	GluLeuAlaHisLysValAlaGluCysLysAla	450
450 632	rPheCysAspSerAlBLysGlnAspArgLeuLysLeuGlnAs 	434 586
585	AACAATTCCGAAACTATAGCTAAAGAAATATCAAATAATACTCAAAAC	ū
433	SerGluAsnGluIleLeuLysLysGluLeu	N
535	ATGGAGGAAATGCGAAAACAAATTCTAAGCATGAAGGATTTGCTAATTT	486
421	T	406
485	GAAGAGGTGCATAAAAATTTACAACTAGTCAAACAAGAAAGTAATTC	436
406	etProValHisMetGlnSerArgSe	397
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396	ysGlnGlyGlnMetTyrMetThrAspSerGlnCysThrSerThr	382
382 385	ySerGlySerHisPheArgLysGluAspMetLeuLeuL::::	369 336
335	CAAG	289

889 1940	ITEASNGINGIUPHEVAILYSIIELYSASPGINASNGIUITE ITEASNGINGIUPHEVAILYSIIELYSASPGINASNGIUTTE ITEASNGINGIUTTE	1891
	OUCLINDADUCACADARANAAADIIAAICIAIIAAATAAAAAAAAAAAAAAAAAAAAAA	) i
75	LysThrAsnArgGluLeuValAspValLysLysLysCysGluAsp	1841
860 1840	eLysThrAlaLeuSerSerThrLeuAsp	851 1791
851 1790	LysLysThrMetSerHisGlnTyrValProValLysThrHisGluGluII :::::::::::::::::::::::::::::::::::	835 1759
834 1758	lyGluAspGlnGluLysIleTyrSerLeuMetSerGluAsnAspAsuAspLeu        	818 1739
818 1738		807 1689
806 1688	MetMetAlaLeuLysSerAsnIleThrGluLeu	796 1639
795 1638	alSerArgLeuGluThrValPheIleProProGluArgH1sGluLysGlu :::::: TAACCAAAAAATCA	779 1625
779 1624	SLEUGluMetGluLysLeuLeuMetGluAsnAlaSerLeuSerLysAsnV        	762 1575
762 1574	AspLeuAsnLysLysLeuSerAspValThrHisLysTyrThrGluLysLy :::::::::         ::::: AATATAGAAGGGCACTTAAAGAATCCAAGGGAAATTATGAAATTGGATT	746 1525
745 1524	euLysValSerGluGluMetLysLysSerHisAspVo	730 1475
730 1474	uLeuThrGlnGlnValAsnAsnLeuThrThrGluMetLysAsnValProL         ::::::::::::::::::::::::::::::::::::	713 1434
713 1433	AsnGlnThrLeuGlnLysGluIleGluLysValCysLeuAspAsnLysLe	697 1387
696 1386	luGlnLysSerGlyGluLeuGlyLysArgIleThrGluLeuThrSerLys :::   :::	680 1340
680 1339		663 1321
663 1320	AsnGluThrArgProLeulysAr ::::::::: GAAAGTGTAAAAACATAATTTATC	647 1279
646 1278	luLysAlaLysLysLeuIleAspValGluArgGluTyrGluArgSerLeu 	630 1247
630 1246	OAlaGluLysPheGluAsnMetLysSerLeuLeuSerAsnGluLeuAsnG::::::::::::::::::::::::::::::::::::	613 1197
-		, 6.T.T.

1941	ATTTAATATGAAAGAAAGCTTAGATAAGAATGAAGATGATTAAAAAAAG 1	990
904 1991	N O	20
921 2041	ysLysValGlnAspAsnSerAlaGluIleLeuAl   :::::         :::::       AAGAGTTAGTTGATGAAAACAACTTATCAGATATATTAAA	35 090
	SerGlnGluGluIleValThrLeuHisGluGluIleA :::::           nAAAATGAGGAAATACAGAAATAACGCACTCTACGC	52
952 2141	LeuaspThrIleGlnGluCys :::       TTAGGACACGTAGATACTTCTGCAAAATAT	963 2190
964 2191	ysLeuLysTyrAlaProIleIleSerLeuGluGluCys 	78
978 2241	gLysPheLysAlaThrGluLysGluLeuLysGluGln     :::        :::          :::  AAAATTGAAAACTGCACAGGAATTAAAATTTGAGTCAAAAAA	91
992 2288	LeuSerGlnGloThrGlnLysTyrAsoThrSer     :::    :  :	.005
1006 2338	SLYSCYSLYSGİNGİUASNASPLYS           AAAAATATACAGGATGCTTACAAG	022
ωo	LysAspLeuLysAspLysAsnValHisIleGluAsnSe :::::: GACGAAATAGACGAAATA	039
0 4	luThrGluArgAlaLeuSerArgLysThrGluGluLeuAsnArgGln 1 ::   :::::	.054
1055 2455	LeulysaspleuleuGlnlysTyrThrGluAlalys         ATCTTAAAGTTGTGCTAATAAATCAATACAAAAATAAAA	.066 2504
1067 2505 .	.LysGluLysGluLysLeuValGluGluAsnAlaLysGlnThrSc     :::      :::  AAAAGTAAGGAAGAAGTTTTCAGTCAAAATAGGTAATGTTTT	.083 2550
1083 2551	leLeualaAlaGlnThrLeuLeuGlnLysGlnHisValProLeuGluGln     :::        :::::	1099 2574
1100 2575	uSerLeuLysLysSerLeuSerGlyThrIleGluT 	1116 2624
1116 2625	uGluLeuLysThrLysGlnArgCysTyrGluLysGluGlnGlnThrV:	1132 2671
1132 2672	alThrGlnLeuArgGlnMetLeuGluAsnGlnLysAsnSerSerValPro    :::	1148 2721
1149	SinValLysGluAlaPheGluLysGluValGlyIl ::::::::           :::	1165

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3558	3509 AGTCCATTAAAAAGTTTAACGAAATATATAGTCATATTAAGACTAATATA	
1371	HisGinGluValIleAlaIleTyrArgThrHisLeu	
3508	AGTTCATTTACATTAG	
1357	1346 lArgSerLeuGlnGlnGlnLeuAlaAspAlaAsp	
5	15 ATAGTAACTAATCAACATAGCATAAACAATGTTAAAGACAAATT	
3414	365 TCGATGTATCTAAAATATTTAACACTGTATTAGACACTCAAAAGTCAAAT	
	325ThrTyrGlySerGly	
3364	TAAATTGCAAGAAATGAAATCAAATGCTGATAAATACA	
1324	1324 u	
3314	3265 TATAACGAATTAAAAAATAAAAAAAACATCATTAAACGAAATTTAATCAAAC	
1324		
N	215 ACACTGAAATGAACACTATAGAAAGCAGTGCAAAAGAAATTGAAGCTCTC	
1307	pAsnLysIleThrGluLeu	
3214	GTAAACTAAAAGGTGTAATTATAGAAGTTAACGAAA	
1293		
3164	O-	
1293	pLysSerLeuThrThrIleThrGluLeuGlnArgArgIleGlnGluSe	
3114	070CATTTCAATACAAAACAGGTAAGTAATCACGAGCCAACTAATTTT	
1276	spGlnGlnGluArgCys	
3069	3051 TGTTCTTACATTAAATGAG	
1260	AlaLysLysLysGluLeuSerAlaLysAspGluLysGluL	
3050	AGCATACTTGGCATATATTAAAAAAAATTATGAAGACACAGTGCAAGA	
1243	nArgLysTyrGluGluValCysGluGl	
3000	AACACTATAGAGAAGAATGTT	
1228	AsnGlu	
2950	2910 CGAAGTATCTAGGTACAAACTGATAAAGGATACCGTTACCA	
1221	AspLeuSerLysTyrLysAlaThrLysSerAspLeuGluT	
2909		
1204	LysGlnAlaLeuLysLysLeuGluThrAr	
2859	AGAAACGGACATA	
1192		
2809	TCTAAAGGCAAGCTCGGACAATCATGAACATGTACAAAGTAAAAGTG	
1182		

seq\_documentation\_block:
; Sequence 1, Application US/09104324B
; Patent No. 6232460

TILE OF INVENTION: MECHOUS FOR DIAGNOSIS AND TREATING FILE OF INVENTION: No. 6233460mal Cells  MER OF SEQUENCES: 4  MER OF SEQUENCES: 4  BEROF SEQUENCES: 666 Fifth Avenue  TYPE: 10103  TREET: 666 Fifth Avenue  TRATE: New York  TIP: 10103  PERATING SYSTEM: PC-DOS  DEBATING SYSTEM: PC-DOS  DEFATING SYSTEM: PC-DOS  DEFINITION NUMBER: 08/09/104,324B  TILING DATE: 25-JUNE-1998  TILING DATE: 15-JUL-1997  TORNEY-AGENT INFORMATION:  AME: HONSON, NO. 6232460man D.  BEGISTRATION NUMBER: 08/09/704,324B  TILING DATE: 15-JUL-1997  TORNEY-AGENT INFORMATION:  BEGISTRATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: LUD 5491  ECCOMMUNICATION NUMBER: 10D 5491  ECCOMMUNICATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 10D 5491  ECCOMMUNICATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 10D 5491  ECCOMMUNICATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 10D 5491  ECCOMMUNICATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 10D 5491  ECCOMMUNICATION NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEFERBROE-DOCKET NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.940  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.940  EEGISTRATION NUMBER: 30.946  EEGISTRATION NUMBER: 30.940  EEGISTRATION NUMBER: 30.940  EEGISTRATION NUMBER: 30.940  EEGISTRATION NUMBER: 30.940  EEGISTRATI	MATION: T rec1, Ozlem; Sahin, Ugur; Pf:
SPONDENCE ADDRESS: 4 SPONDENCE ADDRESS: 4 SPONDENCE ADDRESS: 4 RESSEE: Fulbright & Jaworski LLP EEET: 666 Fifth Avenue TE: New York City TE: New York City TE: New York City TE: New York 10103 TER READABLE FORM: 10103 THER READABLE FORM: RAPPLICATION DATA: LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: 15-July-1997 NEY/ACENT INFORMATION: E: Hanson, No. 6232460man D. ESTRATION NUMBER: UJD 5491 OMMUNICATION LIFORMATION: E: Hanson, No. 6232460man D. EFORM: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 752-5958 TION FOR SEQ ID NO: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 15 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser Say 16 No: 1: E: Hanser S	lods for Identifying Pathogenic Markers In A Sample O 0460mal Cells
REESEE: Fulbright & Jaworski LLP EET: 666 Fifth Avenue TIE: New York City TIE: New York City TIE: New York City TIE: New York City TIE: New York City TIE: New York TIE: New York TIE: New York TIE: New York TIE: Lind THER ENDABLE FORM: 10103 THER ENDABLE FORM: 110103 THER ENDABLE FORM: 110103 THER TIEN TYPE: Diskette, 3.5 inch, 144 kb storage PUTER: 15	NUMBER OF SEQUENCES: 4 CORRESPONDENCE ADDRESS:
TIE: New York City TIE: New York City TIE: New York City 10.03 TIER READABLE FORM:  DISACTION TYPE: Diskette, 3.5 inch, 144 kb storage PUTER: IBM RATING SYSTEM: PC-DOS TWARE: Wordperfect LICATION DATA: LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LE: Hanson, No. 632460man D. LERRCEP/OCCATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LE: Hanson, No. 632460man D. LE: Hanson, No. 632460man D. LE: Hanson, No. 632460man D. LE: Hanson, No. 632460man D. LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,324B LICATION NUMBER: US/09/104,	ADDRESSEE: Fulbright & Jaworski LLP
TITE: New York  TITER READABLE FORM:  10103  TYPE: Diskette, 3.5 inch, 144 kb storage pUTER: IBM  RATING TYPE: Diskette, 3.5 inch, 144 kb storage pUTER: IBM  TRATING SYSTEM: PC-DOS  TWARE: Wordperfect  LICATION NUMBER: US/09/104,324B  LICATION NUMBER: US/09/104,324B  LICATION NUMBER: 08/892,702  LICATION NUMBER: 08/892,702  LICATION NUMBER: 09/892,702  LICATION NUMBER: 09/892,702  LICATION NUMBER: 09/892,702  LICATION NUMBER: 09/892,702  LICATION NUMBER: 09/862,702  LE: HADSON, NO. 6232460man D.  ESTARATION NUMBER: 30,946  ERENCE/DOCKET NUMBER: LUD 5491  OMMUNICATION INFORMATION:  ESHANGE (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX: (212) 318-3000  EFAX	STREET: 666 Fiith Avenue CITY: New York City
TIUM TYPE: Diskette, 3.5 inch, 144 kb storage PUTER READABLE FORM:  FRATING SYSTEM: PC-DOS  TWARE: Wordperfect Wordperfect LICATION DATA: LICATION DATA: LICATION NUMBER: 08/892,702 LICATION NUMBER: 08/892,702 LICATION NUMBER: 08/892,702 LICATION NUMBER: 30,946 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET NUMBER: J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DOCKET J0,96 ERRICE/DO	STATE: New York ZIP: 10103
TWARE: IBM RAPING SYSTEM: PC-DOS TWARE: Wordperfect Wordperfect Wordperfect ILICATION DATA: LICATION NUMBER: US/09/104,324B ING DATE: 25-June-1998 ING DATE: 25-June-1998 ING DATE: 25-June-1998 ING DATE: 15-July-1997 NEY/AGENT INFORMATION: E: HADSON, No. 6232460man D. 15TRATION NUMBER: 30,946 ERENCE/DOCKET NUMBER: LUD 5491 OMMUNICATION INFORMATION EPHONE: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-3000 EFAX: (212) 318-300 EFAX: (212) 318-300 EFAX: (212) 318-300 EFAX: (212) 318-3000 EFAX: (212) 318-300 EFAX: (212) 318-300 EFAX: (212) 318-300	3.5 inch, 144 kb storag
INT APPLICATION NUMBER: US/09/104,324B LIGATION NUMBER: US/09/104,324B LIGATION NUMBER: US/09/104,324B LIGATION NUMBER: US/09/104,324B LIGATION NUMBER: 08/092,702 LIGATION NUMBER: 08/092,702 LIGATION NUMBER: 30,946 ERENCE/DOCKET INFORMATION: E: Hanson, No. 6232460man D. ISTRATION NUMBER: 30,946 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-3000 EFFAX: (212) 31B-300 EFFAX: (212) 31B-3000 EFFAX: (212)	OS
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APPLICATION DATA: LICATION UMBER: 08/892,702 LICATION NUMBER: 09/946 ERENCE/DOCKET NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMUNICATION NUMBER: LUD 5491 OMMU	APPLICATION NUMBER: US/09/104,32 FILING DATE: 25-June-1998
LICATION NUMBER: 15-July-1997, 702 LING DATE: 15-July-1997, NEY/AGENT INFORMATION: E: Hanson, No. 6232460man D. ESTRATION NUMBER: 30,946 ERERGE/DOCKET NUMBER: 30,946 ERERGE/DOCKET NUMBER: 10D 5491 OMMUNICATION INFORMATION: EPHONE: (212) 318-3000 EFAX: (212) 752-5558 TION FOR SEQ ID NO: 1: NCE CHARACTERISTICS: GTH: 393 base pairs E: nucleic acid ANDEDNESS: double OLOGY: linear 324B-1  1/1 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324	CLASSIFICATION RIOR APPLICATION
NEY/AGENT INFORMATION: E: Hanson, No. 623460man D. ISTRATION NUMBER: 30,946 ERRENCE/DOCKET NUMBER: LUD 5491 OMMUNICATION INFORMATION: EPHONE: (212) 318-3000 EFAX: (212) 752-5958 TION FOR SEQ ID NO: 1: NCE CHARACTERISTICS: GTH: 3393 base pairs E: nucleic acid ANDEDNESS: double OLOGY: linear 324B-1  1/1 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/3 carring and and and and and and and and and and	2,7
ISTRATION NUMBER: 30,946 ERENCE/DOCKET NUMBER: LUD 5491 OMMUNICATION INFORMATION: EPHONE: (212) 318-3000 EFAX: (212) 752-5958 TION FOR SEQ ID NO: 1: NCE CHARACTERISTICS: GTH: 3393 base pairs E: nucleic acid ANDEDNESS: double OLOGY: linear 3248-1  Secores: Ouality: 456.50 Percent Identity: 22.550  block: 1101   11011::::::::::::::::::::::::::::	nan
EPHONE: (212) 318-3000  EFAX: (212) 752-5958  TION FOR SEQ ID NO: 1:  NCE CHARACTERISTICS:  GTH: 3393 base pairs  E: nucleic acid ANDEDNESS: double OLOGY: linear  324B-1  Ouality: 456.50  Quality: 50.304  Percent Identity: 22.550  block: -590-2 x US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/2 to: US-09-104-324B-1  1/3 carrenate	REGISTRATION NUMBER: 30,946 REFERENCE/DOCKET NUMBER: LUD 5
TION FOR SEÓ ID NO: 1:  MCE CHARACTERISTICS: GTH: 3393 base pairs E: nucleic acid ANNEBNESS: double OLOGY: 1inear 324B-1  Scores: Quality: 456.50 Quality: 456.50 Quality: 456.50 Caps: 52 Imilarity: 50.304 Percent Identity: 22.550  block: 590-2 x US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-104-324B-1  1/1 to: US-09-	TELEPHONE: (212) 318-3000 TELEPHAX: (212) 752-5958
E: nucleic acid ANDEDNESS: double OLOGY: linear 324B-1 324B-1 324B-1 324B-1    Ouality: 456.50   Gaps: 52   Imilarity: 50.304   Percent Identity: 22.550   block: 590-2 x US-09-104-324B-1	INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
ANDEDNESS: double OLOGY: linear 324B-1  Scores: Quality: 456.50 Quality: 456.50 Quality: 456.50 Quality: 456.50 Quality: 456.50 Partio: 0.787  Ratio: 0.787  Ratio: 0.787  Factor o.787	TYPE: nucleic acid
Scores: Quality: 456.50 Quality: 456.50 Quality: 0.787 Gaps: 52 Imilarity: 50.304 Percent Identity: 22.550  block: -590-2 x US-09-104-324B-1  1/1 to: US-09-104-324B-1 from: 1 to: 3393 euGlyHisAspSerSerTyrTyrAlaArgIleGlyAs	STRANDEDN TOPOLOGY: 09-104-3248-1
Imilarity: 50.304 Percent Identity: 22.550  block: -590-2 x US-09-104-324B-1 1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/2 to: US-09-104-324B-1 from: 1 to: 3393  1/3 to: US-09-104-324B-1 from: 1 to: 3393  1/4 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from: 1 to: 3393  1/5 to: US-09-104-324B-1 from:	456.50 Length:
block: -590-2 x US-09-104-324B-1  1/1 to: US-09-104-324B-1 from: 1 to: 3393  1/1 to: US-09-104-324B-1 from: 1 to: 3393	50.304 Percent Identity: 22
1/1 to: US-09-104-324B-1 from: 1 to: 3393	x US-09-104-324B-1 .
LeuGlyHisAspSerSerTyrTyrAlaArgTleGlyAs	1/1 to: US-09-104-324B-1 from: 1 to:
PASILEUASPILELEUTHILEULEULYSTHRALASETGLUASINSETASIL  :::   :::  :::   :::    :::     :::	LeuGlyHisAspSerSerTyrTyrAlaArgIleGlyAs
ysGlyArgGluLeuTrpLysLysGlyProSerLeuGlnGlnArgAsnLeu   :::    :::    :::     :::	pAsnLeuAspIleLeuThrLeuLeuLysThrAlaSerGluAsnSerAsnL          :::   :::     :::      :::        :::           TGATTTGGAGTTTCCATTTGCAAAGACTAATCTCTCCA
SerGlnMetLeuAspGluValAsnThrLysSerAsnGlnArgGluHisGl ::::::::::::::::::::::::::::::::::::	ysGlyArgGluLeuTrpLysLysGlyProSerLeuGlnGlnArgAsnLeu   :::
nAsnIleGlnAspLeuGluIleGluAsnGluAspLeuLysGluArgL ::::::::	SerGlnMetLeuAspGluValAsnThrLysSerAsnGlnArgGluH1sGl :::   ::: ::: ::: :::: TTGCCCGTGCTTGAGCAGGTTGGTAATTCTGACTGTCACTATCAGGA
euArgLysIleGlnGlnGluGlnArgIleLeuLeuAspLysValAsnGly ::    ::: :::    mmmrAaaacmgmamaaccac	nAsnIleGlnAspLeuGluIleGluAsnGluAspLeuLysGluArgL::::::::
1 1 CONOCIO LA LAGUAGO	<pre>euArgLysIleGlnGlnGlnGlnArgIleLeuLeuAspLysValAsnGly ::    ::: ::    TTTCAAAACTGTATAAGGAG.</pre>

1084	<pre>1 lyArgLysLeuThrGluMetGluGlyGlnLeuLysAspLeuSerAlaLys     :::                                </pre>	591 1046
	SAIGLEUGINLYSGIUI :::      :::    AAAATTACAGAGTGAAA	0 7
574 1002	8 LeuValGluGluPheLysArgAspGluGlyLysLeuMetGluGluAsnLy     :::       ::: ::     ::: :::     ::: 6 CTGCTAGAGGAATCCAGAGATAAAGTTAATCAATTAGAGGAAAAGAC	
557 955	1 laSerAlaGluValGlyLysLeuArgAsnGlnIleLysGlnAsnGluMet ::::::::::::::::   :::::   :::::   6 TATTGATCCAAATCACTGAGAAAGAAAATAAAATGAAAGATTTAACATTT	541 906
541 905	tGluGluLeuLysa :::        ACAAGAATACAAGA	524 856
524 855	LeuLysGluHis	508 821
507 820	ysvall::::::: AACTTC	497 774
497 773	O uGluAspAlaLeuLysAspValGlnLysArgMetTyrGluSerGluGlyL:	480 724
480 723	4 LeuGluCysGluArgVal            2 TATGAATATGAACGG	46, 69;
463 691	ysLeuGlnAsnGluLeuAlaH1sLysValAlaGluCysLysAlaLe     ::    :::             	447 647
447 646	0 uLeuGluAlaMetArgThrPheCysAspSerAlaLysGlnAspArgLeuL   :::        :::  ::: 9 GAATAATGCCACAAGGCATTTATGTAAT	430 619
430 618	AlaLeuProAsnGlnAlaSerTyrSerGluAsnGluIle ::: ::        ::	414 581
580		580
_ (	${\tt lyMetProValHisMetGlnSerArgSerMetLeuArgProLeuGluLe}$	397
397	uLeuLysGlnGlyGlnMetTyrMetThrAspSerGlnCysT        TTTGAAATTA	380 571
380 570	4 GluSerAspHisLeuGlySerGlySerHisPheArgLysGluAspMetLe	364 548
363 547	7 luGluSerLeuArgThrIleGluAlBLeuLysSerArgPheLysTyrPhe ::   :::	347 498
347 497	0 rGluLysGluLysLeuLysSerLeuLeuAlaAlaLysGluLysGluHisG 	330 448
447	I   I   I   I   I   I   I   I   I   I	43
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903	LeuGluAsnThrGlnAsnGlnValLysAl	889
7	GCAAGAAGATATTAATAATAACAAAAAGCAAGAAGAAAGAA	
888	GluAspIleAsnGlnGluPheValLysIleLysAspGluAsnGlu	7
872 1724	ValAspValLysLysL ::::::::   :::: TGACCCTAGAACTCAAGAATC	863 1675
863 16 <b>74</b>	SThrAlaLeuSerSerThrLeuAspLysThrAs 	ຄ ທ
850 1624	ThrMetSerHisGlnTyrValProValLysThrHisGluGlu:::::::::::::::::::::::::::::::::	yo (u
834 1598	AspGlnGluLysIleTyrSerLeuMetSerGluAsnAsnAspL 	
817 1561	SerAsnIleThrGluLeuLysLysGlnLeuSerGluLeuAsnLysLysCy :::::::::::::::::::::::::::::::::::	801 1520
800 1519	roProGluArgHisGluLysGluMetMetAlaLeuLys	788 1484
788 1483	UASNAlaSerLeuSerLysAsnValSerArgLeuGluThrValPheIleD      :::::::    :::::   :::   AAATAAACAATTTGAGAAGAATTGCTGAAGAATTAAAAGGAACA	771 1441
771 1440	ThrHisLysTyrThrGluLysLysLeuGluMetGluLysLeuLeuMetGl	
754 1417	SerHisAspVallIeValAspAspLeuAsnLysLysLeuSerAspVal ::: ::    :::::    :::         ::: , ATAACAAAGAAGTAGAAACTTGAAGAATTGAAAAAAAGTCTTGGGA	739 1374
738 1373	uMetLysAsnValProLeuLysValSerGluGluMetLysLys	
724 1347	CysLeuAspAsnLysLeuLeuThrGlnGlnValAsnAsnLeuThrThrGl    :::     ::::::::::::::::::::::::::	708 1310
707 1309	hrGluLeuThrSerLysAsnGlnThrLeuGlnLysGluIleGluLysVal	691 1265
691 1264	TACTGTCTGCAGCTTGGAAGAATTATACTGTCTGCAGCTTGGAAGAATTA	
2 7	AsnLeuLysAlaLysLeuAlaGlnHisValLysProGluGluHisGluGl	1196
657 1195	luTyrGluArgSerLeuAsnGluThrArgProLeuLysArgGluLeuGlu          ::::::   :::: AAAAAGAAACTCAAATGGAAGAATCTAAT	641 1167
641 1166	uSerAsnGluLeuAsnGluLysAlaLysLysLeuIleAspValGluArgG   ::::::::   ::: 	624 1117
62 <b>4</b> 1116	LeualaLeuserlierroalaGluLysPheGluAsnMetLy	1085

	1164 2405	1147 2363	1131 · 2315 ·	1114 2277	1097 2246	1081 2204	1067 2154	1050 2126	2117	076	1000 2026 1017	987 1976	970 1937	953 1925	37 77	920 1836	903 1816	1766
hrGluGluValSerLysLeuGlnSerGluIleGlnAsnThrLysGln	lyIleIleLysAlaSerLeuArgGluLysGluGluGluSerGlnAsnLy	IProLeualaGluHisLeuGlnVaiLysGluAlaPheGluLysGluVai	ThrValThrGlnLeuArgGlnMetLeuGluAsnGlnLysAsnSerSerVerVerver:::::::::::::::::::::::::::::	euLysGluGluLeuLysThrLysGlnArgCysTyrGluLysGluGlnGln :::	uGluGlnValGluSerLeuLysLysSerLeuSerGlyThrIleGluThrL     :: ::      AAGCACCAATATGATAAGATCATTGAAGAAA	SerGluIleLeuAlaAlaGlnThrLeuLeuGlnLysGlnH1sValProL :::::	LysGluLysGluLysLeuValGluGluAsnAlaLysGlnThr                ::    TAATAGCTGATGAAGCAGTAAAATTACAGAAAGAAATTGATAAGCGATGT	uLeuAsnArgGlnLeuLysAspLeuLeuGlnLysTyrThrGluAlaLys.       ::::: 		GHULLEDGUILL DGUGL	SerGluGluGluAlaLysLysCysLysGlnGluAsnAspLysLe 	LeuLysGluGlnLeuSer :::::       ::: GTACAGCAGAAAGCAAGCAACTGAAT	rolleIleSerLeuGluGluCysGluArgLysPheLysAlaThrGluLys ::::       ::::::::        ::    :ATTGAAGAACTTCAGCAGGAGAATAAGGCCTTGAAAAAA	nLysArgGluLeuAspThrIleGlnGluCysIleLysLeuLysTyrAl           AAAAACAAGTAT	A1	YSSETMETLYSLYSValGlnAspAsnSerAlaGluIleLeuAlaLySTyr ::::::   :::    AAGAGCTAAAACAGAAAAGAGATGAAGTTAAATGTAAATTG	aGluTyrIleSerLeuArgGluHisGluGluLysMetSerGlyLeuArgL     ::::: TGAACTAGAATATGTGAGAG	ATGTTGAAACAAATAGAAAATCTTCAAGAAACAGAAACCCAATTAAGA
 =	s 1180 : : 2434	G 1164 . 2404	Va 1147 2362	ln 1130    AA 2314	L 1114 A 2276	Le 1097	r 1080 T 2203	. 1066 G 2153	. 2125	8 103 A 211	101	As 1000     AA 2025	's 986    A 1975	ap 970	G1 953	r 936 G 1876	L 920 ; G 1835	AAA 1815

	ACATTGAAA 2827	2819
	ArgLe	1313
2818	CAGATAGTTCAGAACTACTGATCTTTTGAGCATGGTTTCAGAAGAAGAAGAG	2769
1312	laLysAspAsnLysIleThrGluLeuLeuAsnAspValGlu	1299
2768	TGAAGAAAGTAAAAAAAAAGAGAAAAATGGCCTTTGAATTTGATATTAATT	2719
1299	eGlnGluSerAlaLysGlnIleGluA	1290
2718	ACACCAACAAAACCAAAACTACAGCAAAGAGAAAAACTTGAATATACCCAT	2669
1290	ThrileThrGluLeuGlnArgArgIl	1281
2668	CTGCCAAAAATACTTTATCTACACCATTGCCAAAGGCATATACAGTGAAG	2619
1280	GluIleLysAspGlnGlnGluArgCysAspLysSerLeu	1264
2618	TCCAAAGATAAAAGACTATCTGTGGACAT	2588
1264	LeuLeuH1sPheS	1247
2587	ACTGTATCTCGAAATTTCACATCAGTTGATCATGGCATA	2549
1247	SluGluValCysGluGluValLeuHisAl	1231
2548	CAGTTCCTTCACAA	2535
1230	LeuGluThrGlnIleSerAspLeuAsnGluLysLeu	1214
2534	AACATTTTTATTGGAAACACCTGAAATTTATTGGAAATTGGATTCTAAAG	2485
1214	gGluValValAspLeuSerLysTyrLysA	1197
2484	2435 GCAAAAGAAAACACAGCTACTCTTAAAGAAAAAAAAAGACAAGAAAACACA	2435

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Result
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
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Copyright (c) 1993 - 2000 Compugen Ltd.
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2717.610 Million cell updates/sec
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                                                                                 myosin heavy chain myosin heavy chain myosin heavy chain myosin heavy chain alpha cardiac myosin beta heavy myosin heavy chain myosin heavy chain novtl protein - nem myosin heavy chain myosin heavy chain myosin heavy chain embryonic muscle m giantin - human
                                       myosin heavy chain
myosin heavy chain
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giantin - human
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                                                                                                                                                                                                                       myosin beta heavy
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slow myosin heavy
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myosin heavy chain
                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                centromere protein
                                                                                                                                                                                                                                                                                                early endosome
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
A57013
early endosome antigen 1 - human
early endosome antigen 1 - human
N;Alternate names: endosome-associated protein
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A57013; S44243
R;Mu, F.T.; Callaghan, J.M.; Steele-Mortimer, O.; Stenmark, H.; Parton, R.G.; Campbel, J. Biol. Chem. 270, 13503-13511, 1995
A;Title: EEA1, an early endosome-associated protein. EEA1 is a conserved alpha-helical
A;Reference number: A57013; MUID:95286647
A;Accession: A57013
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563	564	565.5	566	568	569	569.5	572	573	574.5	575	576	577.5	577.5	580.5	582.5
8.0	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.3
1938	2057	1475	1976	2017	2253	1837	1938	2007	1875	1937	1269	1957	1690	1938	1972
-	N	N	N	Н	N	N	ν	٢	Ŋ	2	N	N	N	N	2
JX0178	S61477	T33318	A59252	A36014	T30336	T41023	A59293	B43402	S38173	138055	F84730	T38077	T13030	JC5421	JC5420
myosin heavy chai	myosin II heavy	hypothetica	myosin heav	myosin heavy		probable nuclea	skeletal myösi	myosin heavy chai	myosin-like prote	myosin heavy cha	probable myosin	hypothetical coil	microtubule bindi	smooth muscle	smooth muscle

## ALIGNMENTS

		<u> </u>																
Qy 409 RPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQNELAHKVAECKALALEC 466	OY 352 TLEALKSKFKKFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSML 408		Qy 305 RILLDKYNGLQLQLNEEVMYADDLESEKEKLKSLLAAKEKQHEESLR 351	Db 127 DGLVTDSSAELQSLEQQLEEAQTENFNIKQMKDLFEQKAAQLATEIADIKSKYDEERSLR 186	Qy 262RNLSQMLDEVNTKS-NOREHONIQDLEIENEDLKERLRKIQQEQ 304	Db 67 GNDSGHGGESNLALKRDDYTLLRQEVQDLQASLKEEKWYSEELKKELEKYQGLQQQEAKP 126	Qy 220 GHDSSYYARIGDNLDILTLLKTASENSNKGRELWKKGPSLQQ 261	Query Match 9.1%; Score 640.5; DB 1; Length 1410; Best Local Similarity 21.7%; Pred. No. 5.9e-12; Matches 297; Conservative 263; Mismatches 440; Indels 369; Gaps 52;	C;Superfamily: human early endosome antigen 1 C;Keywords: calmodulin binding; endocytosis; metal binding; peripheral membrane prote	C;Gene: GDB:EEA1 A;Gene: GDB:EEA1 A;Cross-references: GDB:1369996	A;Cross_references: EMBL:X78998; NID:9475933; PIDN:CAA55632.1; PID:9475934	A; Status: preliminary A; Molecule type: mRNA	A; Accession: \$44243	submitted to the EMBL Data Library, April 1994	A;Cross-references: GB:L40157; NID:g1016367; PIDN:AAA79121.1; PID:g1016368	A; Residues: 1-1410 < RES>	A;Status: preliminary; translated from GB/EMBL/DDBJ	A; Accession: A57013

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KSSVNELTQKNQ-TLTEN-LLKKE---

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C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 19-Jan-2001
C;Accession: A46762; B46762; A49354; S18830; B32562; B33835; B27858; A28908
R;Matsuoka, R.; Beisel, K.W.; Furutani, M.; Arai, S.; Takao, A.
Am. J. Med. Genet. 41, 537-547, 1991
Am. J. Med. Genet. 41, 537-547, 1991
A;Title: Complete sequence of human cardiac alpha-myosin heavy chain gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X56181; NID:928318; PIDN:CAA39642.1; R;Yamauchi-Takihara, K.; Sole, M.J.; Liew, J.; Ing, D.; Liew, Proc. Natl. Acad. Sci. U.S.A. 86, 3504-3508, 1989 A;Title: Characterization of human cardiac myosin heavy chain A;Reference number: A94224; MUID:89264452 A;Accession: B32562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:Z20656; NID:g297023; PIDN:CAA79675.1; PID:g297024 R;Brand, N.J.; Dabhade, N.; Yacoub, M.; Barton, P.J.R. Biochem. Biophys. Res. Commun. 179, 1255-1258, 1991 A;Title: Determination of the 5' exon structure of the human cardiac alp A;Reference number: S18830; MUID:92028859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Epp, T.A.; Dixon, I.M.C.; Wang, H.Y.; Sole, Genomics 18, 505-509, 1993
Genomics Structural organization of the human A;Reference number: A49354; MUID:94140346
A;Accession: A49354
A;Status: nucleic acid sequence not shown; tra
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                                                                                                                                                                               A; Molecule type: DNA
A; ResIdues: 1-3, 'S',5-10,'T',12,14-67 <SAE>
R; Kurabayashi, M.; Tsuchimochi, H.; Komuro,
J. Clin. Invest. 82, 524-531, 1988
A; Title: Molecular cloning and characteriza
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A;Residues: 1-87;/G',89-177;1551-1732,'E',1734-1736,'T',1738-1762,'D',1764-1848
R;Yamauchi-Takihara, K.; Sole, M.J.; Liew, J.; Ing, D.; Liew, C.C.
Proc. Natl. Acad. Sci. U.S.A. 86, 7416-7417, 1989
A;Reference number: A94226
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A;Accession: A46762
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A;Molecule type: DNA
A;Residues: 1-967,'Q',89-177;1551-1732,'E',1734-1736,'T',1738-1762,'D',1764-1939
A;Residues: 1.5, Gianola, K.M.; McNally, E.M.; Feghali, R.; Eddy, R.; Shows, T.B.;
Nucleic Acids Res. 15, 5443-5459, 1987
N;Title: Human cardiac myosin heavy chain genes and their linkage in the genome.
A;Reference number: A93669; MUID:87260010
A;Accession: B27858
A; Molecule type: mRNA
A; Residues: 1407-1532,'N',1534-1539,'M',1541-1576,'NV',1579-1704,'EQ',1707-1762,
A; Cross-references: GB: M21664; NID: g189006; PIDN: AAA36344.1; PID: g386972
                                                                                              A;Reference number: A92770; MUID:88299163
A;Accession: A28908
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A; Residues: 1-87,'Q',89-573,'Q',575-607,'A',609-743,
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A;Cross-references: GDB:120214; OMIM:160710
A;Cross-references: GDB:120214; OMIM:160710
A;Cross-references: GDB:120214; Myosin motor domain homology
C;Superfamily: myosin heavy chain; myosin motor domain homology
C;Reywords: actin binding; ATP; cardiac muscle; coiled coil; heart; hydro:
F;88-768/Domain: myosin motor domain homology cMMOT>
F;178-185/Region: nucleotide-binding motif A (P-loop)
F;549-586/Region: actin binding *status predicted
F;657-679/Region: actin binding *status predicted
F;841-1939/Domain: coiled coil *status predicted
F;841-1939/Domain: coiled coil *status predicted
F;128/Region: 1ight meromyosin
F;129/Modified site: N6,N6,N6-trimethyllysine (Lys) *status predicted
F;847-1707/Active site: Cys *status predicted
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--LSYTQQMEDLKRQLEEEGK---AKNALAHALQSARHDC-DLLREQY---EEETEAKAE 1356
                                                                                KVSRTLEDQANEYRVKLEEAQRSLNDFTTQRAKLQTENGELSRQLEEKEALISQLTRGK-
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'5; Mismatches 494
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A; Molecule type: mRNA
A; Residues: 1-1940 <ELL>
A; Cross-references: EMBL:X13988; NID:g34843;
A; Cross-references: EMBL:X13988; NID:g34843;
R; Eller, M.; Stedman, H.H.; Sylvester, J.E.;
FEBS Lett. 256, 21-28, 1989
A; Title: Human embryonic myosin heavy chain characteristics of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of 
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C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 19-Jan-2001
C;Accession: S04090; S06146; S05442; S12460; S0933; A35082
R;Eller, M, Stedman, H.H.; Sylvester, J.E.; Fertels, S.H.; Rubinstein, N.A.; Kelly, Nucleic Acids Res. 17, 3591-3592, 1989
A;Title: Nucleotide sequence of full length human embryonic myosin heavy chain cDNA. A;Accession: S04090
A;Accession: S04090
A;Status: translation not shown
A;Title: Expression and DNA sequence analysis of a human embryonic skeletal muscle A;Reference number: S05442; MUID:89366648
A;Accession: S05442
                                                                                                  A; Molecule type: mRNA
A; Residues: 774 1662, 'QT', 1665-1940 <EL2>
A; Cross-references: EMBL:X13100; NID:g31143;
R; Karsch-Mizrachi, I; Travis, M.; Blau, H.;
Nucleic Acids Res. 17, 6167-6179, 1989
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Fertels, S.H.; Wu, Q.L.; Raychowdhury,
                                                                                                                                                                          PIDN:CAA31492.1;
                                                                                                                                          Leinwand,
                                                                                                                                                                                                                                                                                                                                                               Interspecies sequence conservation
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A; Molecule type: DNA A; Residues: 856-1390,

'KK',1393-1940

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A.Cross references: GDB:119443; OMIM:160720
A:Map position: 17p13.1-17p13.1
C;Superfamily: myosin heavy chain; myosin motor domain homology C;Superfamily: myosin heavy chain; myosin motor domain homology changre; methylat F;99-767/Domain: myosin motor domain homology changre;179-186/Region: nucleotide-binding motif A (P-loop) F;179-186/Region: actin binding #status predicted F;640-1940/Domain: coiled coil #status predicted F;640-1940/Domain: coiled coil #status predicted F;640-1940/Region: S2
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R;Stedman, H.H.; Eller, M.; Jullian, E.H.; Fertels, S.H.; Sarkar, S.; Sylvester, J.E.; I
J. Biol. Chem. 265, 3568-3576, 1990
A;Title: The human embryonic myosin heavy chain. Complete primary structure reveals evol
A;Reference number: A35082; MUID:90154023
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A;Residues: B56-901,'X',903-971,'X',973-1041,'X',1043-1111,'X',1113-1181,'X',1183-1251,
1,'X',1673-1741,'X',143-1811,'X',1813-1881,'X',1883-1940 <BOW>
A;Cross-references: EMBL:X51593
C:Genetics: .....
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A; Nolecule type: mRNA
A; Residues: 856-1330, 'G', 1332-1390, 'KK', 1393-1607, 'RA', 1610-1940 <BOB>
A; Residues: 856-1330, 'G', 1332-1390, 'KK', 1393-1607, 'RA', 1610-1940 <BOB>
A; Cross*references: EMBL: X51593; NID: g29463; PIDN: CAA35942.1; PID: g29464
A; Cross*imantal source: clone gtmHC-E
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A;Title: Identification of three developmentally controlled isoforms of human myosin
A;Reference number: S09331; MUID:90235862
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Eur. J. Biochem. 189, 55-65, 1
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                                                                                                                                                                                                                      SAETEKEMATMKEEFOKTKDELAKSEAKRKELEEKLYTLVQEKNDLQLQVQAESENLLDA
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                                                                                                                                                                                                                                                                                                                                  ITRTQAVCRGFLMRVEFQKMVQRRESIFCIQYNIRSFMNVKHWPWMKLFFKIKPL---LK 842
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KKRKLED----ECSELKKDIDDLELTLAKVEKEKHATENKVKNLTEELSGLDETIAKLTRE
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22.3%; Pred. No. 2e-11;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 502; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1940
                                                                                                              TERAEDEEEINAELTA 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               methylated amino acid; muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                     533
        996
                                                                                                                                                                                                                            902
                                                                                                                                                                                                                                                                                   473
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hea
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7

centromere protein E - human

,Alternate names: centromere 312K protein; kinesin-related prot
C;Species: Homo sapiens (man)
C;Date: 03-Mar-1994 #sequence\_revision 03-Mar-1994 #text\_change
C;Accession: \$28261

312K protein; kinesin-related protein CENP-E

R; Yen,

ດ :

Schaar, B.T.;

Szilak,

:

Cleveland, D.W

RESULT S28261

¥ ¥	589	KRGRKLTEMEGO-LKDLSAKLALSIPAEKPENMKSLLSNELNEKAKKLIDVEREYE 643	-
¥	644	RSLNETRPLKRELENLKAKLAQHVKPEEHEQLKSRLEQKSGELGKRITELT 694	
ŏ	1054	RKLEGDLKLAGESILDLENDKQQLDERLKKKDFEYCQLQSKVEDEQTLGLQFQKKIKELQ 1113	_
Ϋ́	695	SKNOTLOKEIEKVCLDNKLLTOOVNNLTTEMKNVPLKVSEEMKK 738	
ğ	1114	ARIEELEEEIEAERATRAKTEKORSDYARELEELSERLEEAGGVTSTOIELNKKREAEFL 1173	~
Y	739	SHDVIVDDLNKKLSD	
ğ	1174	KLRRDLEEATLQHEAMVATLRKKHADSVAELGEQIDNLQRVKQKLEKEKSEFKLEIDDLS 1233	•
¥	770	MENASLSKNVSRLETVEIPPERHEKEMMALKSNITELKKQLSELNKKCGE 819	
ğ	1234	SSMESVSKSKANLEKICRTLEDQLSEARGKNEEIQRSLSELTTQKSRLQTEAGELSRQLE 129	ω
Ϋ́	820	DQEKIYSLMSQYVPVKT 847	
Å	1294	EKESIVSQLSRSKQAFTQQTEELKRQLEEENKAKNALAHALQSSRHDCDLLREQYEE 135	0
у	848	HEEIKTALSSTLDKTNRELUDVKKKCE-DINQEFUKIKDENEILKRNLENTQNQVKA 903	
B	1351	EQEGKAELQRALSKANSEVAQWRTKYETDAIQRTEELEEAQEKLAQRLQDSEEQVEAVNA 1410	0
γ	904	EYISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHEE 949	
8	1411	KCASLEKTKORLOGEVEDLMYDVERANSLAAALDKKORNFDKVLAEWKTKCEESQAELEA 1470	0
ρy	950	IAAQKRELDTIQECIKLKYAPIISLEECERKEKATEKELKEQLSQQTQKYNTSEEEA 1006	6
b	1471	SLKESRSLSTELFKLKNAYEEALDQLETVKRENKNLEQEIADLTEQIAENGKTIHELE 152	æ
δ	1007	KKCKQENDKLKKEILTLQKDLKDKNVHIENSYETERALSRKTEELNRQLKDLLQKYTEAK 106	6
8	1529	KSRKQIELEKADIQLALEEAEAALEHEEAKILRIQLELTQVKSEIDRKIAEKD 1581	-
δ	1067	KEKEKLVEENAKQTSEILAAQTLLQKQHVPLEQVESLKKSLSGTIETLKEELKTKQRCYE 112	9
₽.	1582	EEIEQL-KRNYQRTVETMQSALDAEVRSRNEAIRLKKKMEGDLNEIEIQLSHANR 163	5
ð	1127		6
ф	1636	QAAETLKHLRSVQGQLKDTQLHLDDALRGQEDLKEQLAIVERRANLLQAEVEE 1688	8
Ω	1187	LQSEIQNTKQAL	G
В	1689	LRATLEQTERA-RKLAEGELLDSNERVQLLHTQNTSLIHTKKKLETDLMQLQSEVEDASR 1747	7
Qγ	1236		9
₽	1748	DARNAEEKAKKAITDAAMMAEELKKEQDTSAHLERMKKNLEQTVKDLQHRLDEAEQLALK 1807	7
Qy	1280		4
₽	1808	GGKKQIQKLETRIRELEFELEGEQKKNTESVKGLRKYERRVKELTYQSEEDRKNVLR 186	4
γ	1335	_	
В	1865	LODLVDKLQVKVKSYKRQAEEADEQANAHLTKFRKAQHELEEAEERAD 1912	

896	LSSTLDKTNRELVDVKKKCEDINQEFVKIKDENEILKRNLEN	y 855	₹
1492	HCCLKEQEET	)b 1433	$\simeq$
854	NDLKKTMSHQ	806	¥
805 1432	SDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVFIPPERHEKEMMALKSNITE:::	ру 752 рь 1377	9 9
751 1376	KNQTLQKEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVSEEMKKSHDVIVDDLNKKL		2 0
695 1317	RSLNETRPLKRELENLKAKLAQHVKPEEHEQLKSRLEQKSGELGKRITELTS	оу 644 ов 1270	9 0
643 1269	REKRGRKLTEMEGQLKDLSAKLALSIPAEKFENMKSLLSNELNEKAKKLIDVEREYE  :	Dy 587	0 0
586 1215	LKDQLKDMKVKYEGASAEVGKLRNQIKQNEMLVEEFKRDEGKLMEENKRLQKELSMCELE	oy 527 ob 1163	0 0
526 1162	DSDEQIKOLEDALKDVQKRMYESEGKVKQMQTHFLALKEHLTSDAATGNHRLMEE : : ::::   :  ;     :  :  :  :   EEKLKEKSQQLQEKQQQLLNVQEEMSEMQKKINE	Qy 472 Db 1126	0 0
471 1125	NEILKKELEAMRTFCDSAKODRLKLQNELAHKVAECKALALECERVKE-	Qy 424 bb 1066	0 0
423 1065	RKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPLELALPNQASYSE: : :     ::     ::     ::     ::     ::     ::     ::     ::     ::     ::     ::     ::     ::       ::       ::       ::       ::       ::       ::         ::         ::           ::             ::	Oy 375	0 0
374 1009	KEKLKSLLAAKEKOHEESLRTIEALKSRFKYFESDHLGSGSHF	Oy 332 Db 958	0 0
331 957	QNIQDLEIENEDLKERLRKIQQEQRILLDKVNGLQLQLLNEEVMV-ADDLESE :: :  :    :  :  :  :  :  :        :  :	Qy 281 Db 899	ם ס
280 898	NLDILTLLKTASENSNKGRELWKKGPSLQQRNLSQMLDEVNTKSNQREH	Oy 232 Db 844	0 0
aps 59;	Y Match 8.9%; Score 626; DB 1; Length 2663; Local Similarity 21.6%; Pred. No. 2.9e-11; nes 314; Conservative 271; Mismatches 478; Indels 394; Ga	Query Ma Best Loc Matches	
binding; P-loop	;Gene: GDB:CENPE;GDB:361164; OMIM:117143 ;Cross-references: GDB:361164; OMIM:117143 ;Map position: 4924-4925 ;Superfamily: centromere protein E; kinesin motor domain homology;Superfamily: centromere protein E; kinesin motor domain homology mitosis; nucleotide;Reywords: ATP; coiled coil; microtubule binding; mitosis; nucleotide;17-335/Domain: kinesin motor domain homology <kmot> ;86-93/Region: nucleotide-binding motif A (P-loop) ;86-93/Region: nucleotide coil #status predicted <coi>;92/Binding site: ATP (Lys) #status predicted</coi></kmot>	A;Gene: Gi A;Cross-r- A;Map pos C;Superfau C;Keywordd F;7-335/D F;86-93/R F;486-218: F;92/Bind	999900>>>
65	3L:Z15005; NID:g29864; PIDN:CAA78727.1; PID:g298	A; Molecul A; Residue A; Cross-r C; Genetic	0 2 2 2
before mitosis.	Nature 359, 536-539, 1992 A;Title: CENP-E is a putative kinetochore motor that accumulates just A;Reference number: S28261; MUID:93024922 A;Accession: S28261	Nature 35 A;Title: A;Referen A;Accessi	~~~~

В	1493	INELRVNLSEKETEISTIQKQLEAINDKLQNKIQEIYEKEEQLNIKQISEVQENVNELKQ 1552	52
Qy	897	TONOVKAEYISLREHEEKMSGLDN 928	
Дb	1553	FKEHRKAKDSALQSIESKMLELTNRLQESQEEIQIMIKEKEEMKRVQEALQIERDQLKEN 1612	12
Qy	929	SAEILAKYKKSOEEIVTLHEEIAAQKRELDTIQ-ECIKLKY 968	
рb	1613	TKEIVAKMKESQEKEYQFLKMTAVNETQEKMCEIEHLKEQFETQKLNLENIETENIRLTQ 1672	72
Qy	969	APIISLEE 995	<b>J</b> ,
В	1673	ILHENLEEMRSVTKERDDLRSVEETLKVERDQLKENLRETITRDLEKQEELKIVHMHLKE 1732	ຮັ
Qy	996	TOKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIENSYET 1040	5
В	1733	HQETIDKLRGIVSEKTNEISNMQKDLEHSNDALKAQDLKIQEELRIAHMHLKEQQETIDK 1792	¥2
Qy	1041	-ERALSRKTEELNROLKDLLOKYTEAKKEKEKLVEENAKOTSEILAA 1086	36
В	1793	LRGIVSEKTDKLSNMQKDLENSNAKLQEKIQELKANEHQLITLKKDVNETQKKVSEMEQL 1852	2
Qy	1087	QTLLQKQHVPLEQVESLKKSLSGTIETLKEELKTKQRCYEKEQQTVTQLRQML 1139	39
DЪ	1853	KKQIKDQSLTLSKLEIENLNLAQELHENLEEMKSVMKERDNLRRVEETLKLERDQLKESL 1912	2
Qy	1140	KTEEVSKLOS	9
DЪ	1913	QETKARDLEIQQELKTARMLSKEHKETVDKLREKISEKTIQISDIQKDLDKSKDELQ 1969	9
Qy	1200	KLETREVVDLSKYKATKSDLETQISDLNEKLANLNRKY 1237	17
Db	1970	KKIQELQKKELQLLRVKEDVNMSHKKINEMEQLKKQFEPNYLCKCEMDNPQLTKKL 2025	ij
Qy	1238	ſΩ	ŏ
рь	2026	HESLEEIRIVAKERDELRRIKESLKMERDQFIATLREMIARDRQNHQVKPEKRLLSDGQQ 2085	ū
Qy	1267	QEIKDQOERCDKSLTTITELQRRIQESAKQIEAKDNKITELLNDVERLKQALNG 1320	Ō
рb	2086	HIMESIREKCSRIKELIKRYSEMDDHYECINRISIDIEKEIEFHRIMKKIKYVISY 2141	1
Qy	1321	LSQLTYGSGSPSKROSQLIDSLOQQVRSLOQQLADADRQHQEVIAIYRTHLLSAAQGHMD 1380	0
ф	2142	VTKIKEEQHECINKFEMDFIDEVEKQKELLIKIQHLQQD 2180	0
Qy	1381 1	EDVQAALLQIIQMRQGL 1397	
Db	2181 (	CDVPSRELRDLKLNQNM 2197	
RESULT	5		
1000	5		

myosin heavy chain [similarity] - slime mold (Dictyostelium discoideum)
N;Contains: myosin ATPase (EC 36.1.32)
C;Species: Dictyostelium discoideum
C;Date: 05-Oct-1988 #sequence\_revision 05-Oct-1988 #text\_change 02-Feb-2001
C;Accession: A26655; A24728; S00250
R;Warrick, H.M.; De Lozanne, A.; Leinwand, L.A.; Spudich, J.A.
Proc. Natl. Acad. Sci. U.S.A. 83, 9433-9437, 1986
A;Title: Conserved protein domains in a myosin heavy chain gene from Dictyostelium d A;Reference number: A26655
A;MUID:87092266
A;Residues: 1-2116 <AMAN
A;Residues: 1-2116 <AMAN
A;Cross-references: GB:M14628; GB:M11938; NID:g167834; PIDN:AAA33227.1; PID:g167835
A;Cross-references: GB:M14628; GB:M11938; NID:g167834; PIDN:AAA33227.1; PID:g167835
A;Cross-references: GB:M14628; GB:M11938; NID:g167834; PIDN:AAA33227.1; PID:g167835
A;Reference number: A24728; MUID:86016788
A;Residues: 2035-2116 <DEL>
A;Residues: 2035-2116 <DEL>
R;Wagle, G.; Noegel, A.; Scheel, J.; Gerisch, G.

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A:Title: Phosphorylation of threonine residues on cloned fragments of the Dictyostelium A:Reference number: S00250; MUID:BB112226
A:Reference number: S00250; MUID:BB112226
A:A:Recession: S00250
A:Status: nucleic acid sequence not shown
A:Molecule type: DNA
A:Residues: 1734-1893 <WAG>
C:Comment: The rod domain is highly periodic, containing a pattern of 7-residue repeats
C:Comment: The rod domain is highly periodic, containing a pattern of 7-residue repeats
C:Keywords: actin binding: ATP: coiled coil: hydrolase; nucleotide binding: P-loop: phos
F:189-747/Domain: globular head <HED>
F:199-186/Region: nucleotide-binding motif A (P-loop)
F:199-2116/Domain: alpha-helical rod <ROD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
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Matches 283
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    900 QVKAEYISLREHEEKMSGLR------KSMKKVQDNSAEILAKYKKSQEEIVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KETLKAMYDSKDALEAQKRELEIRVEDMESELDEKKLALENLQNQKRSVEEKVRDL--EE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQEQRILLDKYNGLQLQLNEEYMYADDLESE------KEKLKSLLAAK 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LEREKRGRKLTEMEGOLKDLSAKLALSIPAEK-FENMKSLLSNELNEKAKKLIDVEREYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGEKKSLYDLKVKQE---SDMEALRNQISELQSTIAKLEKIKSTLEGEVARLQGELEAEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TVRLDSETKDKS-ELLROKKKLEEELKOVQEALAAETAAKLAQEAANKKLQGEYTELNEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYESEGKVKQMQTHFLALKEH 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----SRLEKI------KDELQKEVEELTESFSEESKDKGVLEKTRVRLQSELDDL 1015
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EKQHEESLR-TIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVH 401
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                                             EADERCNSAIKAKKTAESALESLKDEIDAANNAKAKAERKSKELEVRVAELEESLEDKSG
                                                                                      KTNRELVDVKKKCEDINQEFVKIKDENEI-----
                                                                                                                               KNLEEETAKKVKAEKAMKKAETDYRSTKSELDDAKNVSSEQYVQIKRLNEELSELRSVLE
                                                                                                                                                                   KQLSELN-----KKCGEDQEKIY-SLMSENNDLKKTMSHQYVPVKTHEEIKTALSSTLD
                                                                                                                                                                                                            KRQYADVVSSRDKSVEQLKTLQAKNEELRNTAEEAEGQLDRAERSKKK----AEFDLEEAV
                                                                                                                                                                                                                                                     NKKLSDYTHKYTEKKLEMEKLLMENASLSKNYSRLETVFIPPERHEKEMMALKSNITELK 807
                                                                                                                                                                                                                                                                                          KRKVDLEKEVSELKDQIEEEVASKKAVTEAKNKKESEL-----
                                                                                                                                                                                                                                                                                                                        KRITELTSKNQTLQKEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVSEEMKKSHDVIVDDL 747
                                                                                                                                                                                                                                                                                                                                                                            NSDSTNKHLETSFNNLKLELEAEQKAKQALEKKRLGLESELKHVNEQLEEEKKQKESN-E 1310
                                                                                                                                                                                                                                                                                                                                                                                                                     RSLNETRPLKRELENLKAKLAQHVKPEE-------HEQLKSRLEQKSGELG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAKSNYEKOKKKYELDLEDKSAQLAEETAAKQALDKLKKKLEQELSEVQTQLSEANNKNV 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----DMKVKYEGASAEVGKLRNQIKQNEMLVEEFKRDEGKLMEENKRLQKELSMCE
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Pred. No. 2.5e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   476;
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                                                                                      Indels
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	1339 IDSLQQQVRSLQQQLADADRQHQEVIAIYRTHL 1371 ::  : ::                  2037 VEKLETDYKRAKKEAADEQQQRLTVENDLRKHL 2069		Qу
1338 2036	SAKQIEAKDNKITELLNDVERLK-QALNGLSQLTYGSGSPSK-RQSQL 1338	1293 1977	B 54
1292 1976	KELSAKDEKELLHESIEQEIKDQQERCD-KSLTTITELQRRIQE ;	1250 1917	рβ
1249 1916	LSKYKATKSDLETQISDLNEKLANLNRKYEEVCEEVLHAKK 1249 :	1209 1857	Oy dd
1208 1856	LAEHLQVKEAFEKEVGIIKASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVD 1208KDRKKYEKDLKDTKYKLNDEAATKTQTEIGAAKLEDQIDELRSKLE 1856	1149 1811	Qy Qy
1148 1810	LQKQHVPL-EQVESLKKSISGTIETLKEELKTKQRCYEKBQQTVTQLRQMLENQKNSSVP 1148   :   :   :   :   :   :   :   :   :	1090 1753	Qу
1089 1752	HIENSYETERALSRKTEELNROLKDILQKYTEAKKEKEKLVEENAKOTSEILAAQTL 1089 : :    :    :    :   :   :     :     :     :	1033 1693	Qу
1032 1692	TEKELKEQLSQOTQKYNTSEBEAKKCKQENDKLKKEILTLQKDLKDKNV:: :: :: :	984 1640	Qу
983 1639	KAKAKAKA	946 1587	Оу
1586	1529 TVNVEFIRKKDAEIDDLRARLDRETESRIKSDEDKKNTRKQFADLEAKVEEAQREVVT 1586	1529	Db

A; Status: preliminary; not compared with conceptual translation A; Molecule type; mRNA A; Molecule type; mRNA A; Residues: 1-1911 < MIK> A; Cross-references: GB: U53862; NID: g1289513; PIDN: AAC59912.1; PID: g1289514 C; Superfamily: myosin heavy chain; myosin motor domain homology F; 81-761/Domain: myosin motor domain homology < MMO> R;Nikovits Jr., W.; Wang, G.F.; Feldman, J.L.; Miller, J.B.; Wade, R.; Nelson, J. Biol. Chem. 271, 17047-17056, 1996
A;Title: Isolation and characterization of an avian slow myosin heavy chain ger A;Reference number: A59234; MUID:96291845
A;Accession: A59234 RESULT 6
A59234
AS9234
Slow myosin heavy chain 3 - quail
C:Species: Coturnix coturnix
C:Date: 19-May-2000 #sequence\_revision 19-May-2000 #text\_change 08-Sep-2000
C:Accession: A59234 밁 Ş 밁 ş Ş Query Match 8.8%; Score 621.5; DB 2; Best Local Similarity 21.8%; Pred. No. 2.9e-11; Matches 294; Conservative 258; Mismatches 530; 287 622 242 ASENSNKGRELWKKGPSLQ------QRNLSQMLDEVNTK-------SNQREHQNTQDL 286 919 NEEVMVADDLESEKEKL - - - -SLVMHQLRCNGVLEGIRICRKGFPNRILYGDFRQRYRILNPTAIPEGQFIDSRKGA----EIENEDLK----ERLR----AGGDSGKGKGAKKKGSSFQTVSALHRENLNKLMANLKTTHPHFVRCLIPNERKEPGVMDN 681 ---KSLLAAKEKOHEESLRTI------EALKSRF 360 -----KIQQEQRIL-----Indels 265; Length 1931; LDKVNGLQLQL heavy chain gene expr Gaps 47;

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LKKEQDTSAHLERMKKNMEQTVKDLQLRLDEAEQLALKGGKKQLQKLEARVRELENELEA
                                                                                                                                                                                                                          NQKNSSVPLAEHLQVKEAFEKEVGIIK-----ASLREKEEESQNKTEEVSKLQSE 1190
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                                          -KKELSAKDEKELLHFSIEGEIKDQQERCDKS------LTTITELQRRIQESAKQIEA 1299
                                                                                          ASERVQLLHSQNTSLINQKKKMEADISQLQTEVEEAIQECRNAEEKAKKAITDAAMMAEE
                                                                                                                                IQNTKQALKKLETREVVDLSKYKATKSDLETQISDLNEKLANLNRKYEE-VCEEVLHAK- 1248
                                                                                                                                                                               --KDTQLQLDDAVRANEDLKENIAIVERRNNLLQSELEELRAMVEQSERARKLAEQELTE
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transport protein USO1 - yeast (Saccharomyces cerevisiae)
N;Alternate names: protein DIS52; protein YDLO58w
C;Species: Saccharomyces cerevisiae
C;Date: 12-Jul-1996 #sequence_revision 12-Jul-1996 #text_change 21-Jul-2000
C;Accession: S67593; A38455; S30782
R;Bloecker, H.; Brandt, P.
submitted to the Protein Sequence Database, July 1996
A;Reference number: S67587
A;Accession: S67593
A;Molecule type: DNA
A;Cross-references: EMBL:Z74106; NID:g1431058; PID:e253003; PID:g1431059; MIPS:YDLO5;
A;Experimental source: strain S288C
A;Experimental source: strain S288C
A;Experimental source: strain S288C
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A;Exper
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C:Keywords: coiled coil; transmembrane protein
F;326-342/Domain: transmembrane *status predicted
F;394-410/Domain: transmembrane *status predicted
F;617-633/Domain: transmembrane *status predicted
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A; Residues: 1-389, TAr', 392-724, 'S',726-1790 <NAK>
A; Residues: 1-389, TAr', 392-724, 'S',726-1790 <NAK>
A; Cross-references: GB: X54378; NID: 94777; PIDN: CAA38253.1; PID: 94778
A; Note: the authors translated the codon ACT for residue 768 as Ile
R; Hostetter, M.K.; Herman, D.J.; Bendel, C.M.; McClellan, M.; Tao, N.
submitted to the EMBL Data Library, February 1993
A; Description: An integrin analogue in Saccharomyces cerevisiae.
A; Reference number: S30782
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A; Residues: 71-846, 'E', 848-923, 'K', 925-1252, 'I', 1254-1318, 'V', 1320-1460, 'S', 1462-158
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Best Local
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                                                                                                                                                                                                                                     ELDEKYQILNSSHSSLKENFSILETELKN---VRDSLD-EMTQLRDVLETKDKENQTAL-
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                                                                                                                                                    TIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPL 411
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Pred. No. 3.3e-11;
57; Mismatches 461
        LKKELEAMRTFCDSAKQDRLK------
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RESULT 8
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A37102
myosin beta heavy chain, cardiac and skeletal muscle
N;Contains: myosin ATPase (EC 3.6.1.32)
C;Species: Homo sapiens (man)
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A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1412-1518, 'R',1520-1574, 'NV',1577-1935 <KU
A; Cross-references: GB:M21665
A; Note: the authors translated the codon AGC for resid
A; Note: the authors translated the codon AGC for resid
R; Lichter, P.; Umeda, P.K.; Levin, J.E.; Vosberg, H.P.
Eur. J. Blochem. 160, 419-426, 1986
Eur. J. Blochem. 160, 419-426, 1986
A; Title: Partial characterization of the human beta-my
A; Reference number: A24997; MUID:87030293
A; Recession: A24997
A; Molecule type: DNA
A; Residues: 682-721;975-1112;1854-1935 <LIC>
A; Cross-references: GB:X04627
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A:Residues: I-106,'E',108-671,'LYH',675-857,'A',859-941,'NV',944-1123,'A',1125-1158,
A:Residues: EMBL:X52889; NID:929726; PION:CAA37068.1; PID:929727
A:Yamauchi-Takihara, K.; Sole, M.J.; Liew, J.; Ing, D.; Liew, C.C.
Proc. Natl. Acad. Sci. U.S.A. 86, 3504-3508, 1989
A:Title: Characterization of human cardiac myosin heavy chain genes.
A:Reference number: A94224; MUID:89264452
A:Accession: A94224
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A; Residues: 1-1935 < JAE>
A; Residues: 1-1935 < JAE>
A; Cross-references: GB: M57965; GB: M30603; NID: g179507; PIDN: AAA51837.1; PID: g179508; A; Cross-references: GB: M57; Yamauchi-Takihara, K.; Kellam, B.; Anderson, D.H.; Lin, L.; Rilew, C.C.; Sole, M.J.; Yamauchi-Takihara, K.; Kellam, B.; Anderson, D.H.; Lin, L.; Nucleic Acids Res. 18, 3647-3651, 1990
Nucleic Acids Res. 18, 3647-3651, 1990
A; Title: Complete sequence and organization of the human cardiac beta-myosin heavy ch A; Reference number: S12733; MUID: 90301496
A; Accession: S12733
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A;Molecule type: DNA
A;Residues: 1-87, Q',89-106,'E',108-177;1325-1702,'DR',1705-1786,1788-1803,'E',1804-1
R;Yamauchi-Takihara, K.; Sole, M.J.; Liew, J.; Ing, D.; Liew, C.C.
R;Yamauchi-Cad. Sci. U.S.A. 86, 7416-7417, 1989
A;Reference number: A94226
A;Reference number: A94226
A;Contents: annotation; erratum
A;Contents: annotation; erratum
R;Kurrabayashi, M.; Tsuchimochi, H.; Komuro, I.; Takaku, F.; Yazaki, Y.
J. Clin. Invest. 82, 524-531, 1988
A;Title: Molecular cloning and characterization of human cardiac alpha- and beta-form
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A;Residues: 1854-1865, 'A',1867-1935 <SAE>
A;Residues: 1854-1865, 'A',1867-1935 <SAE>
A;Cross-references: GB:X05631; GB:Y00362; NID:934643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:Y00362; NID:934643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:Y00362; NID:934643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05631; GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PIDN:CAA29119.1; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-references: GB:X05643; PID:93A;Cross-refere
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A;Title: Human cardiac myosin heavy chain A;Reference number: A93669; MUID:87260010
A;Accession: A27858
A; McCessac... ann MRNA
A; Molecule type: mRNA
A; Residues: 785-1076, 'E', 1078-1123, 'A', 1125-1702, 'DE', 1705-1935
A; Cross-references: EMBL:X51591; NID:929467; PIDN:CAA35940.1; PI
A; Cross-references: EMBL:X51591; NID:929467; PIDN:CAA35940.1; PI
R; Bober, E.; Buchberger-Seidl, A.; Braun, T.; Singh, S.; Goedde,
R; Bober, E.; Buchberger-Seidl, A.; Braun, T.; Singh, S.; Goedde,
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A;Accession: B28908
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A; Reference number: S12458
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A; Residues: 653-720
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                                                                                           PID:g29468
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477 IKQLEDALKDVQKRMYESBGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQ-LKDMK 535	Оу 47	_
98 LADAEERCDOLIKNKIOLEAKVKEMNERLEDEEEMNAELFAKKRKLEDECSELKRDIDD- 95	Db 89	_
38	0у 43	_
410 PL 437	Qy 41 Db 83	-
381 LKQGQMYMTDSQCTSTGMPVHMQSRSML	Qy 38 Db 78	
32/ DLESEKEKLKSLLAAKEKQHEESLRTIEALKSRFKYFESDHLGSGSHFRKEDML 380 ::       :	Db 73	
236 LTLLKTASENSNKGRELWKKGPSLQQRNLSQMLDEVNTK 274	Db 61	
W Match 8.7%; Score 610.5; DB 1; Length 1935; Local Similarity 20.9%; Pred. No. 5.9e-11; hes 288; Conservative 269; Mismatches 506; Indels 317; Gaps 50;	Query Best L Matche	
)-1935/Region: light meromyosin Modified site: M6,N6,N6-trimethyllysine (Lys) #status predicted Binding site: ATP (Lys) #status predicted 705/Active site: Cys #status predicted	F;1280- F;129/M F;184/B F;695,7	
	F; 178-1 F; 548-5 F; 655-6 F; 839-1 F; 839-1	
A: Map position: 14q12-14q12 A: Introns: 67/3; 115/3; 168/1; 177/2; 213/3; 244/3; 266/1; 299/1; 333/3; 380/1; 419/3; 24/3; 130/2; 1451/3; 1507/1; 1461/2; 137/3; 1719/3; 1761/3; 1853/3; 1885/3; 1930/3 C: Superfamily: myosin heavy chain; myosin motor domain homology C: Keywords: actin binding; ATP; cardiac muscle; colled coll; heart; hydrolase; methylate	A; Map p A; Intro 24/3; 1 C; Super C; Keywo	
ecule type: mRNA idues: 'LLGVGELASG',1311-1312,'G',1314-1355,'R',1357-1358,'GD',1361-1438,'LQ',1441- e: the first ten codons of the sequence figure show the reverse complementary stratetics: etics: etics: es: GDB:NYH7 se-references: GDB:130215, CMTM,16276	A; Molec A; Resid A; Note: A; Genet A; Gene: A; Gross	
ic Acids Res. 14, 2951-2969, 1986 le: Characterization of diverse forms of myosin heavy chain expressed in adult huma erence number: A93616; MUID:86176778 ession: B23767	Nucleic A;Title A;Refer A;Acces	
coure Type: mixNA Idues: 1393-1702, 'DR',1705-1935 <jan> ss-references: EMBL:X06976; NID:g34860; PIDN:CAA30039.1; PID:g825694 z, L.; Leinwand, L.A.</jan>	A; Resid A; Cross R; Saez,	
Hum. Genet. 76, 47-53, 1987 A;Title: Construction of a human ventricular cDNA library and characterization of a bet. A;Reference number: S02229; MUID:87192738 A;Accession: S02229	A; Title A; Refer A; Acces	
Molecule type: mRNA Residues: 785-830, 'X',832-900,'X',902-970,'X',972-1040,'X',1042-1076,'E',1078-1110,'X 1602-1670,'X',1672-1702,'DE',1705-1740,'X',1742-1810,'X',1812-1935 <bow> Cross-references: EMBL:X51591 Jandreski, M.A.; Liew, C.C.</bow>	A; Molec A; Resic ', 1602 A; Cross R; Jandr	
dentif	** ** **	

YQTEEDRKNLLRLQDLVDKLQLKVKAYKRQAEEAEEQANTNLSKFRKVQHELDEAEERAD	Db 1852	0
	Qy 1326	O
:: HRLDEAEQIALKGGKKQ	Db 1795	ь
ERCDKSLTTITELORRIOESAKOIEAKDNKITELLNDVERLKOALNGI SOLT	Оу 1274	0
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EESQNKTEEVSKLQSEIONTKOALKKLETREVVDIS	Qy 1175	0
EIQLSHANRMAAEAQKQVKSLQSLLKDTQIQLDDAVRANDDLKENIAIVE	Db 1626	
KEELKTKORCYEKEQOTVTQLRQ	Qy 1115	0
	Db 1569	н
55 LKDLLQKYTEAKKEKEKLVEENAKQTSEILAAQTLLQKQHVPLEQVESLKKSLSGTIETL 1114	Qy 1055	_
	Db . 1512	-
	Qy 995	_
EWKQKYEESQSELESSQKEARSLSTELFKLKNAYEESLEHLE-TFKRENKNLQEEISD	Db 1455	-
٠ 🛪	Qy 935	_
QRLQEAEEAVEAVNAKCSSLEKTKHRLQNEIEDLMVDVERSNAAAAAALDKKQRNFDKILA	Db 1395	_
DINQEFVKIKDEN	Оу 875	_
DC-DLLREOYEEETEAKAELQRVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLA	Db 1339	
DLKKTMSHQYVPVKTHEEIKTALSSTLDKTNRELVDVKKKCE	Оу 833	_
EKEALISQLTRGKLTYTQQLEDLKRQLEEEVKAKNALAHALQSARH	Db 1293	٠
RLETVFIPPERHEKEMM	QY 781	_
NMEQI-IKAKANLEKMCRTLEDQMNEHRSKAEETQRSVNDLTSQRAKLQTENGELSRQLD	Db 1234	
LLMENASLSKNVS	Qy 7:	
QHEATAAALRKKHADSVAELGEQIDNLQRVKQKLEKEKSEFKLELDDVTS	Db 1184	
NKLLTQQVNNLTT	Qу 6	
KVEKLRSDLSRELEEISERLEEAGGATSVQIEMNKKREA-EFQKMRRDLEEATL	Db 1131	
ETRPLKRELENLKAKLAQHV	QУ 6:	
	Db 1071	
	Оу 51	
: :	Db 10	
	Ωу 5	
957LELTLAKVEKEKHATENKVKNLTEEMAGLDEIIAKLTKEKKALQEAHQQALDDLQ 1011	Db 9	

RESULT 9
T18296
T18296
myosin heavy chain - Entamoeba histolytica
C:Species: Entamoeba histolytica
C;Date: 15-Oct-1999 #sequence\_revision 15-Oct-1999 #text\_change 08-Sep-2000
C:Accession: T18296

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A;Gene: mhcA
C;Superfamily: myosin heavy chain; myosin motor domain
F;91-780/Domain: myosin motor domain homology <MMO>
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submitted to the EMBL Data Library,
A;Reference number: Z18865
A;Accession: T18296
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A;Residues: 1-2139 <GUT>
A;Cross-references: EMBL:L03534; NID:g1850912; PID:g1850913; PIDN:AAB48065.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary; translated from GB/EMBL/DDBJ
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200 KDAVEVLIKNGADVTLLDALGHDSSYYARIGDNLDILTLLKTASENSNKGRELWKKGPSL 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OQRNLSOMLDEV-NTKSNOREHONIODLEIENEDLKERLRKIOOEORIL---LDKVNGLO 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KLAEEIKKREAAENALASATAKTGELEAKIQDLEDKISEL----ESKLSAAELDKQELNL 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TFCDSAKQDRLKL---QNELAHKVAECKALA------LECERV-----KEDSDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AEMQESI---DEKEDEITKLKGDIKLLEEEKDD------LEQDRADVSA--T
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIENLEEDKEELKETIDNLK--GDLKDSKLKGEDLEVEITELNSQINTLNATVDKKDKTI 989
                                                                                                                                                                                                                                                                                                                                                                                                                       LIDVE---REYERSLNETRPLKRELENL-KAKLAQHVK------PEEHEQLKSRL 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KISGLKQDYEDLEDDKNKIEGDLRNAQRKIKELDDEITKGADVSQYLQKQKEEYESQIAK 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QIKQLEDALKDVQKRMYESEGKVKQMQTHFLALKEHLTSDAATCNH--RLMEELKDQLKD 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------QTQLKLGETEKSLAAQVAATKKASDERDTLSQNLENEKLTTKNLTKTKADLEK 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEDMLLKOGOMYMTDSOCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMR 435
                                                                                                                                                                                                                                                                                                          KNIQADLRKATADLQEANEKKAEVEAQRDKLVADNKKMTKTLEEIKARDEENTYKVENYE 1427
                                                                                                                                                                                                                                                                                                                                                                                    VADAELLNKKKAQSDKELNSLKAELEALTKAKSVVESKNKDSENEKAALSEEIDQANEKL 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RE--KRGRKLTE-----MEGQLKDLSAKL-ALSIPAEKFENMKSLLSNELNE----KAKK 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MQEEKEAIGNDVKNKEKTIKEKELEIQSLQEKLDETEVEKEDAEKKKKEIEKEMKALQEE 1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MKVKYEGASAEVGKLRNQIKQNEMLVEEF--KRDEGKLMEEN----KRLQKELSMCELE 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KDDIAKKLNKITI---ECE------DAKDEIAKLEQELEDEE--NKNKDLTNELQ---
                                                                                                                                                                                                                               KVLKRKEADLEEANENLDIEKKDRMNKEKQVKKLEGELKETKDKLNAAIAEKDSIFTAKK 1487
                                                                                                                                                                                                                                                                                                                                            EQKSGELGKRITELTSKNQ----TLQKEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVS--E 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                               KENVESSKNSTEKDKKKLEDNLKDTOKKLDDMTADNEKLKAKAKDLEAQLNEVQDNHEKA 1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289;
                                    INQEFVKIKDENEILKRNLENTQNQVKAEYISLREHEEKMSGLRKSMKKVQDNS----AE
                                                                            QVNELESRPYGTGNADENEIKIRDAQIADLNKALEMKGYQNNQLQATNKEL----
                                                                                                                                                       GSDADLEELNKTYEEHDEVVAKLNTGITKLTRDNQSAEEELNELRSKADKDKKKISELEE 1547
                                                                                                                                                                                         ----RLETVFIPPERHEKEMMALKSNITEL-----KKQLSELNKKCGEDQEKIYSLMS
                                                                                                                                                                                                                                                                      EMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLME-----NASLSKNVS-----
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                                                                                                                  ---KTMSHQYVPVKTHEEIKTALSSTLDKTNRELVDVKKKCED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 610.5; DB 2; Pred. No. 6.5e-11;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                502;
      -KLENAKKRLEQDKDEADKAVSE
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        1639
                                              931
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                                                                                                                                                                                                                                                                              780
                                                                                    1598
                                                                                                                          875
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	2086 DETRMSSLEDETKKGTDALANKQLELDKVNKQYEKLKKQYKRLAAAKDSDDD 2137	2086	В
	PSKRQSQLIDSLQQQVRSLQQQLADADRQHQEVIAIYRTHLLSAAQGHMDED 1382	1331	Qy
2085	TSQKKLDELQKTIADYETKEASFNTEIGKTQAELKKYQQQVRD	2043	뭕
1330	DQQERCDKSLTTITELQRRIQESAKQIEAKDNKITELLNDVERLKQALNGLSQLTYGSGS	1271	Qy
2042	VKCQELETKVAEVGGANVSTAKVKAKYEABIEELTTEAEDALKAK	1990	망
1270	ATKSDLETQISDLNEKLANLNRKYEEVGEEVLHAKKKELSAKDEKELLHFSIEQEIK	1214	Q
6861	QAYEKKLQELQENDNDFEEYKETADKRINTLSAQKDDLQKELEKERGLKQDSEKEYQRLR	1930	В
1213	EAFEKEVGIIKASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDLSKYK	1157	Qy
1929		1870	밁
1156	KEEL-KTKQRCYEKEQQTVTQLRQMLENQKNSSVPLAEHLQVK	1115	Qγ
1869	HAETMRLKGRLEKEAAEVQVRLEALQKNLDLAQQEKAKATKDYRAADGELKSLMNELDDV	1810	Db
1114	TSEILAAQTLLQKQ	1080	δÃ
1809	LEDEIEKTTDDNNKLSEEIDSLDRKYNALLDSKDSDVSMKEKFQDELKVTKDALETEKKN	1750	망
1079	KNVHIENSYETERALSRKTEELNROLKDLLQKYTEAKKEKEKLVEENAKQ	1030	Q.
1749	QLEQERTTAANAEAERKKIQAELDEVKFNLEDVTNQREKLVAKNSENDAEIDSLKEEKKA	1690	Дb
1029	QLSQQTQKYNTSEEEAKKCKQENDKLKKEILTLQKDLKD	991	Qy
1689	QTIKRKGLEEEVKKLTTEIQALKFQINAPSSVAQEEEKQRLESDIAELKE	1640	В
990	932 ILAKYKKSQEEIVTLHEEIAAQKRELDTIQECIKLKYAP-IISLEECERKFKATEKELKE	932	Qy

myosin heavy chain, skeletal muscle, embryonic - rat
N;Contains: myosin ATPase (EC 3.6.1.32)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Dec-1993 \*sequence\_revision 31-Dec-1993 \*text\_change 19-Jan-2001
C;Accession: A24922; A2538; B24363
R;Strehler, E.E.; Strehler-Page, M.A.; Perriard, J.C.; Periasamy, M.; Nadal-Ginard, J. Mol. Biol. 190, 291-317, 1986
A;Title: Complete nucleotide and encoded amino acid sequence of a mammalian myosin }
A;Accession: A24922; MUID: 87060988
A;Accession: A24922; MUID: 87060988 A;Reference number: A24263; MUID:86059474
A;Accession: B24263
A;Status: preliminary
A;Molecule \*\*\*\* A;Molecule type: DNA
A;Residues: 1-1940 <STR>
A;Residues: 1-1940 <STR>
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A;Cross-references: GB:X04267; GB:X05004; NID:g56658; PIDN:CAA27817.1;
A;Strehler, E.E.; Mahdavi, V.; Periasamy, M.; Nadal-Ginard, B.
J. Biol. Chem. 260, 468-471, 1985
J. Biol. Chem. 260, 468-471, 1985
A;Title: Intron positions are conserved in the 5' end region of myosin A;Title: Intron positions are conserved in the 5' end region of myosin A;Reference number: A22538; MUID:85080119
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A; Residues: I-168 <ST2>
A; Residues: I-168 <ST2>
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A; Title: Characterization of GB:M10136; NID:g605074 A;Molecule type: mRNA A;Residues: 1358-1490,'G' <PER> A;Cross-references: GB:K03468; NID:9205573; PIDN:AAA41652.1; PID:9205574 A;Experimental source: clone pMHC-72 10 116/3; 169/1 end region of myosin heavy-chain PID:g1619328 embryonic

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Qy	Db 1	Qy	DB 04			O 6		₽ 5	P B	Qy	dd t	QV E	ş Ş	gb .	9 5	γ Q	Db 1	Q V	Qy	Que Bes Mat	F; 13( F; 13( F; 696	A; Not C; Sup C; Key F; 89- F; 179 F; 549 F; 549 F; 840
851	297	823	773 1237	7	7	1057	647	1000	943	537	906	477	422	786	388	334	682	292	241 627	ביש פ	31-19 )/Mod 5/Bin 5,706	te: t perfa yword -767/ 9-186 9-586 5-678 0-194
IKTALSSTLDKTNRELVDVKKKCE-DINQEFVKÍKDENEILKRNLENTQNQVKAEYI 906	SIVSQLSRSKQAFTQQIEELKRQLEEENKAKNALAHALQSSRHDCDLLREQVEEEQE 1353	ISHQYVPVKTH	ASLSKNVSRLETVFIPPERHEKEMMALKSNITELKKOLSELNKKCGEDDE 822	RDLEEATLQHEATVATLRKKHADSAAELAEQIDNLQRVKQKLEKEKSEFKLEIDDLSSSV 1236		KVEDEQTLSLQLQKKIKELQARI 1	NETRPLKRELENLKAKLAOHVKPEEHEQLKSRLEQKSGELGKRITELTSKN 697	TALESTON THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STORM THE STO	:   : ::::       :   :   :::        :   :::				SENEILKKELEAMRTFCDSAKQDRLKLQNELAHKVAECKALALECERVKEDSDEQ 476	TRITOAVCRGFLMRVEFQKMMQRRESIFCIQYNIRAFMNVKHWPWMKLFFKIKPLLKSAE 845	AKL	ESLRTIEA	PGAMEHSLVLHQLR		TASENSNKGRELWKKGPSLQQRNLSQMLDEVNTKSNQREHQNIQDLEIENE 291	y Match 8.7%; Score 610; DB 1; Length 1940; Local Similarity 22.3%; Pred. No. 6.2e-11; hes 304; Conservative 255; Mismatches 502; Indels 304; Gaps 49;	40/Region: light meromyosin lified site: No,No,No-trimethyllysine (Lys) #status predicted ding site: ATP (Lys) #status predicted //Active site: Cys #status predicted	A;Note: the list of intron positions may be incomplete C;Superfamily: myosin heavy chain; myosin motor domain homology C;Keywords: actin binding; ATP; coiled coil; hydrolase; methylated amino acid; muscle cd F;89-767/Domain: myosin motor domain homology <mmot> F;179-186/Region: nucleotide-binding motif A (P-loop) F;549-586/Region: actin binding #status predicted F;840-1940/Domain: coiled coil #status predicted F;840-1280/Region: S2</mmot>

RESULT 11
A61231
myosin heavy chain nonmuscle form A - human
myosin heavy chain nonmuscle form A - human
N;Alternate names: cellular myosin heavy chain; myosin type 9; NMMHC-A
N;Contains: myosin ATPase (EC 3.6.1.32)
C;Dacte: 12-May-1994 #sequence\_revision 14-Jul-1994 #text\_change 19-Jan-2001
C;Accession: A61231; A34876; I52562; I61692
R;Simons, M.; Wang, M.; McBride, O.W.; Kawamoto, S.; Yamakawa, K.; Gdula, D.; Adelst
Circ. Res. 69, 530-539, 1991
A;Title: Human nonmuscle myosin heavy chains are encoded by two genes located on dif
A;Reference number: A61231; MUID:91316803
A;Accession: A61231; MUID:91316803

A; Molecule type: mRNA
A; Residues: 1-715 <SIM>A; Residues: 1-715 <SIM>A; Residues: 1-715 <SIM>A; Cross-references: GB:M69180; NID:g189029; PIDN:AAA61765.1; PID:g189030
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A; Tross-references: GB:M69180; NID:g189029; PIDN:AAA61765.1; PID:g189030
B; Saez, C.G.; Myers, J.C.; Shows, T.B.; LeInwand, L.A.
Proc. Natl. Acad. Sci. U.S.A. 87, 1164-1168, 1990
A; Tritle: Human nonmuscle myosin heavy chain mRNA: generation of diversity through al.
A; Reterence number: A34876; MUID:g0138958
A; Residues: 715-1961 <SAE>
A; Rolecule type: mRNA
A; Residues: 715-1961 <SAE>
A; Cross-references: GB:M31013; NID:g189035; PIDN:AAA36349.1; PID:g189036
B; Toothaker, L.E.; Gonzalez, D.A.; Tung, N.; Lemons, R.S.; Le Beau, M.M.; Arnaout, M.
A; Title: Cellular myosin heavy chain in human leukocytes: isolation of 5' cDNA clone
A; Reference number: 152562; MUID:g2003925
A; Molecule type: mRNA
A; Residues: 1-52, 'EAI', 56-659, 'T', 661-868, 'T', 870-930, 'C', 932-1239, 'RG', 1242-1337 <R
A; Cross-references: GB:M81105; NID:g188988; PID:g353596
R; Bement, W.M.; Hasson, T.; Wirth, J.A.; Cheney, R.E.; Mooseker, M.S.

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A: Map position: 22q12.3-22q13.1
C: Superfamily: myosin heavy chain; myosin motor domain homology
C: Keywords: actin binding: ATP; colled coll; hydrolase; methylated amino (C: Keywords)
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F: 174-181/Region: nucleotide-binding motif A (P-loop)
F: 552-565/Region: actin binding #status predicted
F: 656-640/Region: actin binding #status predicted
F: 837-1938/Domain: colled coll #status predicted <COI>
F: 837-1938/Domain: colled coll #status predicted <COI>
F: 1278-1961/Domain: light meromyosin #status predicted <COI>
F: 1278-1961/Domain: carboxyl-terminal <COIT>
F: 125/Modified site: N6, N6. N6-trimothyllysine (Lys) #status predicted
F: 694,704/Active site: Cys #status predicted
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C;Genetics:
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nes 272; Conserv
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MKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLET
                                                                                                                                RQKHSQAVEELAEQLEQTKRVKANLEKAKQTLENERGELANEVKVLLQGGRDSEHKRKKV
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                                                                                   SRLEOKSGELGKRI-TELTSKNOTLOKEIEKVC-----LDNK--LLTQQVNNLTTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.6%; Score 608; DB 1; Length 19 ilarity 20.9%; Pred. No. 7.1e-11; Conservative 278; Mismatches 464; Indels
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GB:L29141; NID:g457249; PIDN:AAA20904.1; PID:g531134
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                                                                                    LLHESIBQEIKDQ-QERCDKSLTTITELQRRIQES---AKQIEAKDNKITELLNDVERLK 1315
                                                                                                                                                                 KLETREVVDLSKYKATKSDLETQISDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKE
                                                                                                                                                                                                   QLEEELEEEQGNTELINDRLKKANLQIDQINADLNLERGHAQKNENARQQLERQNKELKV 1793
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                                                                                                                                                                                                                                                                                                    GTIETLKEELKTKORCYEKEQOTVTOLROMLENOKNSSVPLAEHLOVKEAFEKEVGIIKA 1168
                                                                                                                                                                                                                                                                                                                                          RKLQAQMKDCMRELDDTRASREEILAQ-AKENEKKL-----
                                                                                                                                                                                                                                                                                                                                                                        EELNROLKDLLOKYTEAKKEKEKLVEENAKOTSEILAAQTLLQKQHVPLEQVESLKKSLS 1108
                              QALNGLSQLTYGSGSPSKRQSQLIDSLQQQVRSLQQQLADAD 1357
                                                                                                                                   LLQVDDERRNAEQYKDQADKASTRLKQLKRQLEEAEEEAQRANASRRKLQRELEDA----
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   TETADAMNREVSSLKNKLRRGD
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myosin heavy chain beta, cardiac muscle [similarity] - golden hamster C;Species: Mesocricetus auratus (golden hamster) C;Date: 02-Jul-1996 #sequence\_revision 02-Jul-1996 #text\_change 02-Fel C;Accession: I48153; A28298 A;Cross-references: GB:L12104; NID:g402371; PI R;Jandreski, M.A.; Sole, M.J.; Liew, C.C. Nucleic Acids Res. 16, 4737, 1988
A;Title: Sequence of CDNA encoding the Syrian A;Reference number: A28298; MUID:88247788 R;Wang, R.; Sole, M.J.; Cukerman, E.; Liew, C.C. J. Mol. Cell. Cardiol. 26, 1155-1165, 1994
A;Title: Characterization and nucleotide sequence A;Reference number: I48153; MUID:95115033 RESULT 148153 A; Molecule type: mRNA A; Residues: 962-965, 'E', 967-980, 'E', 981-985, 'Q', 987-1007, 'A', 1009, 'E', 1011, 'RKT', 536, 'L', 1538-1555, 'K', 1557-1934 <JAN> A; Cross-references: GB:X07273; NID:949640; PIDN:CAA30256.1; PID:949641 A; Molecule type: DNA A; Residues: 1-1934 < RES> A; Status: preliminary; translated A; Reference number: 148153; A; Accession: 148153 A; Note: the C; Genetics: A; Accession: A28298 12 erences: GB:X07273; NID:949640; PIDN:CAA30256.1; PID:949641 authors translated the codon GTG for residue 1504 as Leu from GB/EMBL/DDBJ PIDN: AAA62313.1; hamster cardiac of. #text\_change 02-Feb-2001 the cardiac alpha-myosin heavy PID: g402372 beta-myosin heavy

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                              EKTKHRLQNEIEDLMVDVERSNAAAAALDKKQRNFDKILAEWKQKYEESQSELESSQKEA
                                                               ENTQNQVKAEYISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHEEIAAQK
                                                                                                     AELQCVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLAQRLQDAEEAVEAVNAKCSSL
                                                                                                                                                                                                               SNITELK----KOLSELNKKCGEDQEK----IYSLMSENNDLKKTMSHQYVPVKTHEEIK
                                                                                                                                                                                                                                                                                        VDDLNK----KLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVFIPPERHEKEMMALK
                                                                                                                                                                                                                                                                                                                                                               GELGKRITELTSKNQTLQKEIEKVCLDNKLLTQQVNNLTTEMKNVPLKVSEEMKKSHDVI
                                                                                                                                                                                                                                                                                                                                                                                                EEAGGATSVQIEMNKKREA-EFQKMRRDLE--EATL-----QHEATAAALRKKHADSV 1199
                                                                                                                                                                                                                                                                                                                                                                                                                     ------IDVEREYERSLNETRPLKRELENLKAKLAQHVKPEEHEQLKSRLEQKS----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VADDLESEKEKL-----KSLLAAKEKQHEESL-RTIEALKSRFKYFESDHLGSGSHF
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                                                                                                                                          TALSSTLDKTNREL------VDVKKKCEDINQEFVK----IKDENEILK-----RNL
                                                                                                                                                                              SQLTRGKLTYTQQLEDLKRQLEEEVKAKNTLAHALQSARHDC-DLLREQY----EEETEAK
                                                                                                                                                                                                                                                     EDQMNEHRSKAEETQRSVNDLTSQRAKLQTENGELSRQLD--
                                                                                                                                                                                                                                                                                                                             AELGEQIDNLQRVKQKLEKEKSEFKL-----ELDDVTSNMEQI-IKAKANLEKMCRTL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKLLERRDSLLVIQWNIRAFMGVKNWPWMKLYFKIKPLLKSAETEKEMATMKEEFGRVKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----RKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPL----ELALPNQA-----
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21.0%;
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Pred. No. 8e-11;
9; Mismatches 490
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C:Species: Mus musculus (house mouse)
C:Date: 02-Unl-1996 #sequence_revision 02-Unl-1996 #text_change
C:Accession: 149464; 149463; 149461; 149461 | 149604
R:Quinn-Laquer, B.K.; Kennedy, J.E.; Wei, S.J.; Beisel, K.W.
Genomics 13, 176-188, 1992
A:Title: Characterization of the allelic differences in the mous
A:Reference number: A38207; MUID:92250040
A:Accession: 149464
A;Cross-references: GB:m62404; NID:g192609; PIDN:AAA37424.1; PID:g192610 C;Superfamily: myosin heavy chain; myosin motor domain homology C;Keywords: ATP; cardiac muscle; heart; nucleotide binding; P-loop
                                                                                                                            A;Reference number: I49604; MUID:91225025
A;Accession: I49604
                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: mRNA
A;Residues: 1-193,'D',195-837,'S',839-955,'N',957-1938 <RE2>
A;Cross-references: GB:M76600; NID:g191621; PIDN:AAA37161.1;
                                                                       A; Residues: 1-67 <RE5>
                                                                                                                                                                            R;Gulick, J.; Subramaniam, A.; Neumann, J. Biol. Chem. 266, 9180-9185, 1991
A;Title: Isolation and characterization
                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-544, 'A', 546-1938 <RE4>
A; Cross-references: GB; M76598; NID:9
                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-1938 < RE3>
                                                                                                                   A; Status: translated from
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A;Accession: I49461
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     CKQENDKLKKEILTLQKDLKDKNVHIENSYETERALSRKTEELNRQLKDLLQKYTEAKKE
                                                              SSQKEARSLST--ELFKLKNAYEESLEHLE-TFKRENKNLQEEISDLTEQLGEGGKNVHE
                                                                                                                   EIAAQKRELDTIQECIKLKYAPIISLEECERKFKATEKELKEQLSQQTQKYNTSEEEAKK
                                                                                                                                                                            AKCSSLEKTKHRLQNEIEDLMVDVERSNAAAAALDKKQRNFDKILAEWKQKYEESQSELE
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                                                                                                                                                                                                                                                                                          EEMEAKAELQRVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLAQRLQDAEEAVEAVN
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C:Species: Rattus norvegicus (Norway rat)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-
C;Accession: S06006; S07536; I67441; An2989
R;Kraft, R; Bravo-Zehnder, M; Taylor, D.A.;
Nucleic Acids Res. 17, 7529-7530, 1989
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myosin beta heavy chain, cardiac muscle [similarity] -
myosin heavy chain, cardiac muscle [similarity] -
N;Contains: myosin ATPase (EC 3.6.1.32)
C; Keywords: actin binding; ATP; card E; 88-766/Domain: myosin motor domain F; 178-185/Region: nucleotide-binding
                                   A; Molecule type: mRNA A; Molecule type: mRNA A; Residues: 1524-1528, 'V',1530, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, A; Residues: 1524-1528, 'V',1530, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, A; Residues: 1524-1528, 'V',1530, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, 'R',1785-1783, 'V',1530, 'R',1732-1730, 'H',1732-1783, 'K',1785-1850, 'R',1732-1783, 'K',1785-1850, 'R',1732-1783, 'K',1785-1850, 'R',1732-1783, 'K',1785-1850, 'R',1732-1783, 'K',1785-1850, 'R',1782-1783, 'K',1785-1850, 'R',1782-1783, 'K',1785-1850, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, 'R',1785-1850, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, 'R',1532-1730, 'H',1732-1783, 'K',1785-1850, 'R',1785-1850,                                                                                                                                                                                                                                                                      Nature 297, 659-664, 1982
A;Title: Molecular characterization of two myosin A;Reference number: A02988; MUID:82220036
A;Accession: A02989
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A;Molecule type: mRNA
A;Residues: 1871-1935 <RES>
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Eur. Heart J. 5, 181-191, 1984
A;Title: Cardiac myosin heavy chain isozymic
A;Reference number: I53305; MUID:85179510
A;Accession: I67441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X15939; NID:g56656; PID
R;MCNally, E.M.; Kraft, R.; Bravo-Zehnder, M.; T
J. Mol. Biol. 210, 665-671, 1989
A;Title: Full-length rat alpha and beta cardiac
A;Reference number: S07535; MOID:90133919
A;Accession: S07536
A;Status: nucleic acid sequence not shown
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A; Residues: 1-950, 'RK', 953-1935 <MCN>
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A; Residues: 1-1935 < KRA>
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F;655-677/Region: actin binding #status predicted
F;639-1935/Domain: coiled coil #status predicted <COI>
F;839-129/Region: 52
F;1280-1935/Region: light meromyosin
F;129/Modified site: N6,N6-trimethyllysine (Lys) #status predicted
F;184/Binding site: ATP (Lys) #status predicted
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                                                                                                                                                                                                                                                                                                         1195 KHADSVAELGEQIDNLQRVKQKLEKEKSEFKL-----ELDDVTSNMEQI-IKAKANLE 1246
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AKCSSLEKTKHRLQNEIEDLMVDVERSNAAAAALDKKQRNFDKILVEWKQKYEESQSELE 1468
                                      ---RNLENTQNQVKAEYISLREHEEKMSGLRXSMKKVQDNSAEILAKYKKSQEEIVTLHE 948
                                                                          EETEAKAELQRVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLAQRLQDAEEAVEAVN 1408
                                                                                                              THEEIKTALSSTLDKTNREL-----VDVKKKCEDINQEFVK----IKDENEILK---
                                                                                                                                                    E--ALISOLTRGKLTYTQQLEDLKRQLEEEVKAKNALAHALQSARHDC-DLLREQY---E
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밁 Ş 망 Qγ 밁 Q ₽ Matches Query Match Best Local : 972 ENKYKNLTEEMAGLDEIIAKLTKEKKAL-----QEAHQQ-----ALDDLQ----AE 1013 435 RTFCDSAKQDRLKLQNELAHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYES 494 375 RKEDMILKQGQMYMTDSQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAM 434 894 321 EVMVADDLESEKEKLKSL-----LAAKEKQHEESLRTIEALKSRFKYFESDHLGSGSHF 374 846 EKEMATMKEEFG-----RLKEALEKSEARRKELEEKMVSLLQEK-----NDLQLQVQA 893 261 QRNLSOMIDEVNTKSNOREHONIQDLEIENEDLKERLRKIQOEQRIILDKVNGLOLOLNE 320 ---ELTAKKRNV---EDECS------ELKRDIDDLELTLAK-----VEKEKHAT 971 E---QDNLSDSEERCDQLIKNKIQLEAKVKEMTERLEDEEEMNA------266; h 8.6%; Score 602; DB 2; Length 1935; Similarity 22.0%; Pred. No. 1e-10; 66; Conservative 260; Mismatches 451; Indels 232; Gaps 934

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                                                                                                   1317 ALNGLSQLTYGSGSPSK---RQSQLTDSLQQQVRSLQQQLADADRQHQEVIATYR--THL 1371
                                                                                                                                           1786 MEQTIKOLOHRLDEAEQIALKGGKKOLOKLEARVRELENELEAEQKRNAE---SVKGMRK 1842
                                                                                                                                                                                                                                              1211 ---KYKATKSDLETQISDLNEKLANLNRKYEE-VCEEVLHAK--KKELSAKDEKELLHFS 1264
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                                   1372 LSAAQGHMD 1380
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                                                                                                                                                                           IEQEIKDQQERCDKS-----LTTITELQRRIQESAKQIEAKDNKITELLNDVERLKQ 1316
                                                                                                                                                                                                              OKKKMEADLSOLOTEVEEAVQESRNAEEKAKKAITDAAMMAEELKKEODTSAHLERMKKN 1785
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MISCELLANEOUS: EACH MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). IT CAN LATER BE SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (SI) AND 1 ROD-SHAPED SUBFRAGMENT (S2).

SUBFRAGMENT (S2).

MISCELLANEOUS: THE CARDIAC ALPHA ISOFORM IS A 'FAST' ATPASE MYOSIN, WHILE THE BETA ISOFORM IS A 'SLOW' ATPASE.

SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.

SIMILARITY: CONTAINS 1 TO DOMAIN.
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   METHYLATION (TRI-) (POTENTIAL).

ALKYLATION (SH-2) (POTENTIAL).

ALKYLATION (SH-2) (POTENTIAL).

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-ELFKLKNAYEESLEHLE-TFKRENKNLQEEISDLTEQLGEGGKNVHELEKVRKQLEVEK 1539
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MISSING (IN REF. 5).
MW; ECB87E7CE8768B6F
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2; Mismatches 9
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SPLICING. DISEASE:

DISEASE: ANTIGEN IN THE IN HEPATITIS B.

AUTOIMMUNE DISEASE

SJOEGREN'S

SYNDROME

This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).

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(0.13439; Q.14436; Q.13270; Q.13654;
20-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
GOLGI AUTOANTICEN, GOLGIN SUBFAMILY A 4 (TRANS-GOLGI P230)
GOLGIN) (GOLGIN-245) (72.1 PROTEIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LT 2
                                                                                                                                                                                                                                                                                      MEDLINE-96215236; PubMed-8626529; Erlich R., Gleeson P.A., Campbell P., Dietzsch E., Toh B. Reflich R., Gleeson P.A., Campbell P., Dietzsch E., Toh B. Molecular characterization of trans-Golgi p230: a human membrane protein encoded by a gene on chromosome 6p12-22 extensive coiled-coil alpha-helical domains and a granin p. Biol. Chem. 271:8328-8337(1996).
                                                       Thesis (1994),
                                                                                                                                Fritzler M.J., Lung C.-C., Hamel J.C., Griffith K.J., Cha "Molecular characterization of golgin-245, a novel Golgi protein containing a granin signature.";
J. Biol. Chem. 270:31262-31268(1995).
                                                                                                                                                                                                               SEQUENCE OF 131-2230
                                                                                                                                                                                                                                        Submitted (NOV-1994)
                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                  Balague
                                                                                           FISSUE-Gastric
                                                                                                         SEQUENCE OF 524-672 FROM
                                                                                                                                                                        MEDLINE-96125112; PubMed-8537393; Fritzler M.J., Lung C.-C., Hamel
                                                                                                                                                                                                  TISSUE-Placenta
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 GOLGI.
SUBCELLULAR LOCATION:
GOLGI MEMBRANE.
ALTERNATIVE PRODUCTS:
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CHARACTERIZATION.

MEDLINE-98437347; PubMed-9763420;

MEDLINE-98437347; Schaar B.T., Yen T.J.;

A Chan G.K.T., Schaar B.T., Yen T.J.;

Chan G.K.T., Schaar B.T., Yen T.J.;

Characterization of the kinetochore binding domain of CENP-E reveal

The critical control of the kinetochore proteins CENP-F and hBUBRI.";

L. T. Cell Biol. 143:49-63(1999).

C. T. FUNCTION: MINUS-END DIRECTED MICROTUBULE MOTOR. PROBABLE

KINETOCHORE MOTOR. ACCUMULATES JUST BEFORE MITOSIS AT THE G2 PH

C. OF THE CELL CYCLE. PROBABLY IMPORTANT FOR CHROMOSOME MOVEMENT

C. OF THE CELL CYCLE. PROBABLY IMPORTANT FOR CHROMOSOME MOVEMENT

C. AND/OR SPINDLE ELONGATION.

C. ISUBCULT: INTERACTS WITH CENP-F AND BUBRI KINASE.

C. OLONGRESSION, RELOCATES TO THE SPINDLE MIDZONE AT ANAPHASE, AND

COUGRESSION, RELOCATES TO THE END OF THE CELL DIVISION.

C. ISUBLILARITY: BELONGS TO THE KINESIN-LIKE PROTEIN FAMILY.
                                               Query Match
Best Local Similarity
Matches 314; Conser
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30-MAY-2000
CENTROMERIC
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CHARACTERIZATION.
MEDLINE-95196755; PubMed-7889940;
MFDLINE-95196755; PubMed-7889940;
Thrower D.A., Jordan M.A., Schaar B.T., Yen T.J.
Thrower D.A., Jordan M.A., Schaar B.T., Yen T.J.
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MEDLINE-93024922; PubMed-1406971;
Yen T.J., Li G., Schaar B.T., Szilak I.,

"CEMP-E is a putative kinetochore motor
mitosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Mitotic HeLa cells contain a microtubule motor."; EMBO J. 14:918-926(1995).
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Eukaryota; Metazoa;
Mamumalia; Eutheria;
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DOMAIN
NP_BIND
SEQUENCE
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PIR; S28261; S28261.
HSSP; P03069; 1ZII.
MIM; 117143;
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                                                                                                                                                                                                                                                                                      PROSITE: PS00411; KINESIN_MOTOR_DOMAIN1; 1.
PROSITE: PS50067; KINESIN_MOTOR_DOMAIN2; 1.
Motor protein; Cell division; ATP-binding; Coiled coil; Mitosis;
Cell cycle; Centromere.
                                                                                                                                                                                                                                                                    DOMAIN
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232 NLDILTLLKTA------SENSNKGRELWKKGPSLQQRNLSQMLDEVNTKSNQREH 280
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SM00129; KISC; 1.
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Last annotation update)
(CENP-E PROTEIN).
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COILED COIL (POTENTIAL).
GLOBULAR (POTENTIAL).
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
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                                                                        Score 626;
Pred. No. 1
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                                                    Mismatches
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                          QTLLQKQHVPLEQVE----SLKKSLSGTIETLKEELKTK---ORCYEKEQQTVTQLRQML
                                                                                                             HQETIDKLRGIVSEKTNEISNMQKDLEHSNDALKAQDLKIQEELRIAHMHLKEQQETIDK
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                                                      LRGIVSEKTDKLSNMQKDLENSNAKLQEKIQELKANEHQLITLKKDVNETQKKVSEMEQL
                                                                                 -ERALSRKTEELNRQLKD------LLQKYTEAKKEKEKL-----VEENAKQTSEILAA
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                                                                                                                                        -TQKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIENSYET---
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    X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS)
MEDLLNE-95345067; Pubmed-7619796;
Smith C.A., Rayment I.;
"X-ray structure of the magnesium(II)
                                                                                                               "X-ray structures of the myosin motor domain of Dictyostelium discoldeum complexed with MgADP.BeFx and MgADP.AlF4-."; Biochemistry 34:8960-8972(1995).
                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS)
MEDLINE=95345066; Pubmed=7619795;
Fisher A.J., Smith C.A., Thoden J.B.,
                                                                                                                                                                                                                                                                                                MEDLINE-88112226; PubMed-2828113; Wagle G., Noegel A., Scheel J., Gerisch "Phosphorylation of threonine residues objectyostelium myosin heavy chain."; FEBS Lett. 227:71-75(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MHCA.

Dictyostelium discoideum (Slime mold).

Bukaryota; Mycetozoa; Dictyosteliida;
                                                                                                                                                                                          Fisher A.J., Rayment I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              *Replacement of threonine residues by serine and alanine in a phosphorylatable heavy chain fragment of Dictyostelium myosin FEBS Lett. 269:239-243(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1988 (Rel. 09, 01-OCT-1989 (Rel. 12, 20-AUG-2001 (Rel. 40, MYOSIN II HEAVY CHAIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gerisch G
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Lueck-Vielmeter D., Schleicher M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-87092266; PubMed-3540939; Warrick H.M., de Lozanne A., Lein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P08799;
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Dictyostelium discoideum.";
Proc. Natl. Acad. Sci. U.S.A. 83:9433-9437(1986)
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PDB; IMMB: 17-AUG-96.
PDB; IMMB: 17-AUG-96.
PDB; ILVK; 28-JAN-98.
D1ctyDb; DD01008; mhcA.
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"X-ray crystal structure and solution fluorescence characterization of Mg.2'(3')-0-(N-methylanthraniloy) nucleotides bound to the Dictyostellum discoideum myosin motor domain.";

J. Mol. Biol. 274:394 407(1997).

-I- FUNCTION: MYOSIN IS A PROPEIN THAT BINDS TO ACTIN & HAS ATPASE ACTIVITY THAT IS ACTIVATED BY ACTIN.

-I- SUBUNIT: MYOSIN II HEAVY CHAIN IS TWO-HEADED. IT SELF-ASSEMBLES INTO FILAMENTS. HEXAMER OF 2 HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC) AND 2 REGULATORY LIGHT CHAIN SUBUNITS
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MEDLINE=97452580; Pubmed=9305951;
Gullck A.M., Bauer C.B., Thoden J.B., Rayment I.;
"X-ray structures of the MgADP, MgATPgammaS, and MgAMPPNP complexes of the Dictyostellum discoideum myosin motor domain.";
Biochemistry 36:11619-11628(1997).
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                                                                                                                                                                                                                                                                    PIR;
                                                                                                                                                                                                                                                                                                                                            between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long, as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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"X-ray structure of the magnesium(II).ADP.yanadate complex of the
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                                                       InterPro; IPR000048; IQ.
InterPro; IPR001609; myosin_head
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SUBFRAGMENT (S2).

COMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTENN COMPOSED OF 4 HEPTAPEPTIDE CYCLES OF A PRESIDUE REPEAT PATTENN COMPOSED OF 4 HEPTAPEPTIDE CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

PTM: PHOSPHORYLATION INHIBITS THICK FILAMENT FORMATION AND REDUCTHE ACTIN-ACTIVATED ATPASE ACTIVITY.

MISCELLANEOUS: DICTYOSTELIUM MYOSIN II HAS NO K(2)EDTA ATPASE ACTIVITY.

PERHAPS CORRELATED WITH THE ABSENCE OF A CYS AT THE SPOSITION (688).
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SUBCELLULAR LOCATION: HIGHEST CONCENTRATION IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                          SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation
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A26655; A26655.
S00250; S00250.
                     PF00612;
PF00063;
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43;

Goedde H.W., isoforms

of human

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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-89263803; PubMed-2726495;
Eller M.S., Stedman H.H., Sylvester J.E., Rubinstein N.A., Kelly A.M., Sarkar S.;
Rubinstein N.A., Kelly A.M., Sarkar B.;
                                                                                                                                                                                                                                                                                                                                                                                                     MYH3_HUMAN STANDARD; PRT; 1940 AA. P11055; Q15492; 01-JUL-1989 (Rel. 11, Created) 01-JUL-1989 (Rel. 11, Last sequence update) 20-AUG-2001 (Rel. 40, Last annotation update) MYOSIN HEAVY CHAIN, FAST SKELETAL MUSCLE, EMBI
                  SEQUENCE OF 774-1940 FROM N.A.

MEDLINE-90033298; PubMed-2806546;

MEDLINE-90033298; PubMed-2806546;

Eller M.S., Stedman H.H., Sylvester J.E., Fertels S.H., Wu Q.-L.

Raychowdhury M.K., Rubinstein N.A., Kelly A.M., Sarkar S.;

"Human embryonic myosin heavy chain cDNA. Interspecies sequence
                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
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Catarrhini; Hominidae
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Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
ProDom; PD000355; myosin_head; 1.
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PROSITE: PS50096; IO; 1.
Myosin; Muscle protein; Coiled coil
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FEBS Lett. 256:21-28(1989).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPERTIDES CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

PIM: TWO CYSTEINE RESIDUES IN THE S1 DOMAIN ARE SELECTIVELY ALKYLATED AND ARE REQUIRED FOR MYOSIN ATPASE ACTIVITY.

MISCELLANEOUS: REACH MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (LAM) AND 1 HEAVY MEROMYOSIN (HAM). IT CAN LATER BE SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
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SIMILARITY: CONTAINS 1 MYOSIN-LIKE
SIMILARITY: CONTAINS 1 IQ DOMAIN.
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Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
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01-MAY-1992 (Rel. 22, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
INTRACELLULAR PROTEIN TRANSPORT PROTEIN USO1.
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                                                                                                    Bai Y., Symington L.S.;
Submitted (MAY-1996) to the
-i- FUNCTION: REQUIRED FOR P
                                                                                                                                                                                          SEQUENCE OF 782-1790 FROM N.A. HOStetter M.K., Herman D.J., Bendel Kendrick K.E.;
                                                                                                                                                                                                                                               *A cytoskeleton-related gene, usol, is required
protein transport in Saccharomyces cerevisiae.*,
J. Cell Biol. 113:245-260(1991).
                                                                                                                                                                                                                                                                                          STRAIN-X2180-1A;
MEDLINE-91185402; PubMed-2010462;
Nakajima H., Hirata A., Ogawa Y.,
Yamasaki M.;
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                                                                                                                                                SEQUENCE OF 1-8 FROM N.A.
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SUBCELLULAR LOCATION: CYTOPLASMIC. ASSOCIATED WITH INTRACELLULAR MEMBRANES. PROBABLY PRESENT ON VESICLES OPERATIONAL BETWEEN THE MEMBRANES PROBABLY PRESENT ON VESICLES OPERATIONAL BETWEEN THE ENDIT COMPOSED DOMAIN: THE GOLGI COMPOSED DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, COMPOSED OF AN HEPTAPEPTIDE REPEAT PATTERN CHARACTERISTIC OF ALPHA-HELICA OF LIPACHELICA MAY FORM FILAMENTOUS STRUCTURES IN THE CELL.
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SGD; S0002216; USO1.
InterPro; IPR002017;
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G -> E (IN REF. 2).

E -> K (IN REF. 2).

V -> I (IN REF. 2).

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Pred. No. 2.1e-11;
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Eukaryota; Metazoa;
Manumalia; Eutheria;
NCBI_TaxID=9606;
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"The complete sequence of the human beta-myosin a comparative analysis of its product."; Genomics 8:194-206(1990).
[2]
                                                       SEQUENCE FROM N.A.

MEDLINE=91065634; PubMed=2249844;

Jaenicke T., Diederich K.W., Haas W.,

Pfordt M., Bach A., Vosberg H.P.;
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Kurabayashi M., Tsuchimochi H., Komuro I., Takaku F., Yazaki Y.;
"Molecular cloning and characterization of human cardiac alpha- an
beta-form myosin heavy chain complementary DNA clones. Regulation
evaresation during development and pressure overload in human
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Geisterfer-Lowrance
                                                 Proc. Natl. Acad. Sci. U.S.A. 90:3993-3997(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yamauchi-Takihara
Proc. Natl. Acad.
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Genet. 58:267-276(1995).
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K., Sole M.J., Liew J., Ing D., Liew
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Sci. U.S.A. 86:3504-3508(1989).
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                                                                                                                                                     MEDLINE-93168485; PubMed-8435239; Al-Mahdawi S., Chamberlain S., Cleland J., Nihoyannopoulos P., Gilligan D., French J., Choudhury L., Williamson R., Oakley C.; "Identification of a mutation in the beta cardiac myosin heavy chain gene in a family with hypertrophic cardiomyopathy."; Br. Heart J. 69:136-141(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        McKenna W., Seidman C.E., Seidman J. A molecular basis for familial hype cardiac myosin heavy chain gene miss Cell 62:999-1006(1990).
                                                             VARIANT CMH1 TRP-719
MEDLINE-95179132; Pul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT CMH1 GLY-778.
MEDLINE-93343938; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nishi H., Kimura A., Harada H., Toshima H., Sasazuki T.; "Novel missense mutation in cardiac beta myosin heavy chain found in a Japanese pattent with hypertrophic cardiomyopathy Biochem. Biophys. Res. Commun. 188:379-387(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-93038688; PubMed-1417858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypertrophic cardiomyopathy."; Hum. Mol. Genet. 2:1731-1732(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dausse E., Komajda M., Fetler L., Dubourg O., Dufour C., Carrier L. Wisnewsky C., Bercovici J., Hengstenberg C., Al-Mahdawi S.; Wisnewsky C., Bercovici J., Hengstenberg C., Al-Mahdawi S.; "Familial hypertrophic cardiomyopathy. Microsatellite haplotyping an identification of a hot spot for mutations in the beta-myosin heavy chain gene.";
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MEDLINE-9620901; PubMed-8655135;

KO Y.-L., Chen J.-J., Tang T.-K., Cheng J.-J., Lin S.-Y., I

KO M.-L., Chen J.-J., Tang T.-K., Cheng J.-J., Lin S.-Y., I

Kuan P., Wu C.-W., Lien W.-P., Liew C.-C.;

"Malignant familial hypertrophic cardiomyopathy in a family

453Arg-->Cys mutation in the beta-myosin heavy chain gene:

coexistence of sudden death and end-stage heart failure.";

hum. Genet. 97:585-590(1996).
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WEDLINE-98204402; PubMed-9544842;

Jeschke B., Uhl K., Weist B., Schroder D., Meitinger Dohlemann C., Vosberg H.-P.;

"A high risk phenotype of hypertrophic cardiomyopath)
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Moolman J.C., Brink P.A., Corfield V.A.;
"Identification of a novel Ala797Thr mutation in exon 21
myosin heavy chain gene in hypertrophic cardiomyopathy.";
Hum. Mutat. 6:197-198(1995).
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(CHAIN, FAST SKELETAL MUSCLE, EMBRYONIC

WYH3 MYOSIN HEAVY

Rattus norvegicus (Rat). Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;

Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat

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11. FUNCTION: MUSCLE CONTRACTION.

12. FUNCTION: MUSCLE CONTRACTION.

13. SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

14. SUBURIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

15. SUBCELLULAR LOCATION: THICK FILAMENTS OF THE MYORIBRILS.

16. DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEDTAPEDTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COILED COILES.

16. PTM: TWO CYSTEINE RESIDUES IN THE SI DOMAIN ARE SELECTIVELY ALKYLATED AND ARE REQUIRED FOR MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). TO CAN LATER BE SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strehler E.E., Strehler-I
Nadal-Ginard B.;
"Complete nucleotide and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS50096; IQ: 1.
Myosin; Muscle protein; Colled cc
Calmodulin-binding; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
PF000m; PD000355; myosin_head; 1.
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SMART; SM00242; MYSC;
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InterPro; IPR002928; Myosin_tail.
InterPro; IPR002017; Spectrin.
InterPro; IPR001609; myosin_head.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; A24922; A24922.
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SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
SIMILARITY: CONTAINS 1 IQ DOMAIN.
                                                                                                                           TASENSNKGRELWKKGPSLQ-----QRNLSQMLDEVNTKSNQREHQNIQDLEIENE---
                                                                             TTDADGGKKKVAKKKGSSFQTVSALFRENLNKLMSNLRT----THPHFVRCIIPNETKT
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8.7%;
22.3%;
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COILED COIL (POTENTIAL).
AIP (POTENTIAL).
ACTIN-BINDING.
ACTIN-BINDING.
                                                                                                                                                                                                                                                                                                           METHYLATION (TRI-) (POTENTIAL).
ALKYLATION (SH-1).
ALKYLATION (SH-2).
MW; B5D546A596E5A696 CRC64;
                                                                                                                                                                           Score 610; DB 1;
Pred. No. 3.9e-11;
5; Mismatches 502
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                                      EIQNTKQALKKLETREVVDLSKYKA---
                                                                                                                                                                                                                         RKOMELEKADI----QMALEEAEAALEHE----EAKILRIQLELTQVKSEIDRKIAEKDEEI 1584
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                                                                                                          QTVTQLRQMLENQKNSSVPLAEHLQVKEAFEKEVGIIKASLREKEEESQNKTEEVSKLQS
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                                         ----TKSDLETQISDLNEKLANLNRKYE
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1 - FUNCTION: MUSCLE CONTRACTION.

2 - - SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

2 HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

3 HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

4 HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

5 HEAVY CHAIN SUBUNITS (MLC-2).

6 LOUGHLANDORY LIGHT CHAIN SUBUNITS (MLC-2).

7 LOWAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CONCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,

8 C CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,

9 C CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,

10 C CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES,

11 C CHARACTERISTIC FOR ALPHA-HELICAL COTLED COLLS.

12 C CHARACTERISTIC FOR ALPHA-HELICAL COTLED COLLS.

13 C CHARACTERISTIC FOR ALPHA-HELICAL COTLED COLLS.

14 MISCELLANEOUS: EACH MYOSIN HEAVY CHAIN OAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (HMM). IT CAN LATER BE SUBTRAGMENT (S2).

15 SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.

16 SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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P13540; Q60540;
O1-JAN-1990 (Rel. 13, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
MYOSIN HEAVY CHAIN, CARDIAC MUSCLE BETA ISOFORM
MYH7.
                                                                                             EMBL; L12104; AAA62313.1;
EMBL; X07273; CAA30256.1;
PIR; A28298; A28298.
HSSP; P08799; 1MND.
                                InterPro; IPR000048; InterPro; IPR002928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIINE-95115033; PubMed-7815459; Wang R., Sole M.J., Cukerman B., Liew C.-C.; Wang R., Sole M.J., Cukerman B., Liew C.-C.; "Characterization and nucleotide sequence of the cardiac alpha-myosin heavy chain gene from Syrian hamster."; "Ol. Cell. Cardiol. 26:1155-1165(1994).
      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     heavy chain.";
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Eukaryota: Metazoa: Chordata: Craniata: Vertebrata: I
Mammalia: Eutheria: Rodentia: Sciurognathi: Muridae;
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ole M.J., Liew C.-C.;
encoding the Syrian
Myosin_tail myosin_head
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PROSITE; PS50096; TO; 1.

MYOSIN; Muscle protein; Coiled coil; Thick filament; Actin-binding;

ATP-hinding; Methylation; Alkylation; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SMART; SM00015; IQ; 1.
SMART; SM00242; MYSC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
PTODOM; PD000355; myosin_head;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00612; IQ;
                                                                                                                                                                                                                                                                                                                                                691 QLRCNGVLEGIRICRKGFPNRILYGDFRQRYRILNPAAIPEGQFIDSRKGA----EKLL
                                                                                                                                                                                                                                                                                                                                                                                                           631 DKGKGKAKKGSSFQTVSVLHRENLNKLMTNLRSTHPHFVRCIIPNETKSPGVMDNPLVMH
                                                                                                                                                                                                                                                                                                                                                                                                                                       247 NKGRELWKKGPSLQ------QRNLSQMLDEVNTK------SNQREHQNIQDLEIENE
DLEGSLEQEKKVRMDLERAKRKL-EGDLKLTQE-SIMDLENDKQQLDEKLKKKDFELNAL 1089
                KLRNQIKQNEMLVEEFKRDEGKLMEENKRLQKELSMCELEREKR------
                                                                                                                                                                        ALEKSEARRKELEEKMVSLLQEKNDLQLQVQAEQDNLADAEERCDQLIKNKIQLEAKVKE
                                                                                                                                                                                                                                                                                                          VADDLESEKEKL-----KSLLAAKEKQHEESL-RTIEALKSRFKYFESDHLGSGSHF : | : : | | | | | | ::: : : | | | | |
                                                                                      MQTHFLALKEHLTSDAATGNHRLMEELKDQLKD-----MKVKYEGASAEVG 546
                                                                                                                 MTERLEDEEEMNAELTAKKRKLEDECSELKRDIDD----LELTLAKVEKDKHATENKVKN
                                                                                                                                                                                                         SYSENEILKKELEAMRTF-----
                                                                                                                                                                                                                                   KKLLERRDSLLVIQWNIRAFMGVKNWPWMKLYFKIKPLLKSAETEKEMATMKEEFGRVKD
                                                                                                                                                                                                                                                                                                                                                                             DLK-----ERLR-------KIQQEQRIL------LDKVNGLQLQLNEEVM
                                                                                                                                                                                                                                                                                           SSLDIDHNQYKFGHTKVFFKAGLLGLLEEMRDERLSRIITRIQA----QSRGLLSRMEF
                                                                                                                                                                                                                                                              -----RKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPL----ELALPNQA-----
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222928 /
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1934
                                                         LTKEKKALQEAHQQALDDLQAEEDKVNTLTKSKVKLE---QQVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.6%; Score 606; DB 1
21.0%; Pred. No. 5e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      279;
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D -> E (IN REF. 2).
T -> TE (IN REF. 2).

T -> TN REF. 2).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METHYLATION (TRI-)
ALKYLATION (SH-1) (
ALKYLATION (SH-2) (
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> K (IN REF. 2).
FDBAC58310B0B57D
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                                                                                                                                                                                                      ------CDSAKQDRLKLQNEL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      490;
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                                                                             MYH6_MOUSE STANDARD; PRT; 19
002566; Q64258; Q64738;
15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence up
15-JUL-1998 (Rel. 40, Last annotation
20-AUG-2001 (Rel. 40, Last annotation
MYOSIN HEAVY CHAIN, CARDIAC MUSCLE ALF
                                                                                                                                                                                                                                                                     1871
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     MYH6 OR MYHCA.
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                               MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1237
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SNITELK----KQLSELNKKCGEDQEK----IYSLMSENNDLKKTMSHQYVPVKTHEEIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EDQMNEHRSKAEETQRSVNDLTSQRAKLQTENGELSRQLD------EKE--ALI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NARIEDEQALGSQLQKKLKELQARIEELEEELEAERTARAKVEKLRSDLSRELEEISERL
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                                                                                                                                                                                                                                                                                                                                                                                                                    AKKAITDAAMMAEELKKEQDTSAHLERMKKNMEQTIKDLQHRLDEAEQIALKGGKKQLQK
                                                                                                                                                                                                                                                                                                                                                                                                                                          YEE-VCEEVLHAK--KKELSAKDEKELLHFSIEQEIKDQQERCDKS------LTTITE
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                                                                                                                                                                                                                                                                     QLKVKAYKRQAEEAEEQANTNLSKFRKVQHELDEAEERAD
                                                                                                                                                                                                                                                                                                        QQQVRSLQQQLADADRQHQEVIAIYR--THLLSAAQGHMD 1380
                                                                                                                                                                                                                                                                                                                                             LEARVRELENELEAEQKRNAE---SVKGMRKSERRIKELTYOTEEDRKNLLRLODLVDKL 1870
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       Craniata; Vert
Sciurognathi;
                                                                                     ALPHA ISOFORM
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                                                                                                                                                                              1938
                             Vertebrata;
                                                                                                                                                                              ζ
           Muridae;
                                                                                     (MYHC-ALPHA)
                              Euteleostomi;
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             EMBL; M76598; AAA37159.1; ...
EMBL; M76599; AAA37160.1; ...
EMBL; M76600; AAA37161.1; ...
EMBL; M76601; AAA37162.1; ...
EMBL; M62404; AAA37424.1; ...
EMBL; M62404; AAA37424.1; ...
HSSP; P08799; IMND.
SWISS-2DPAGE; Q02566; MOUSE.
MGD; MGI:97255; Myhca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -I- FUNCTION: MUSCLE CONTRACTION.
-I- SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2
-I- SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2
-I- SUBCELLULAR LOCATION: THICK FILAMENTS OF THE MYOFIBRILS.
-I- DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING
-I- DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING
-I- CYCLES OF A 28-RESIDUE REPEAR PATTERN COMPOSED OF 4 HEPTAPEPTIDES,
-I- PTM: TWO CYSTEINE RESIDUES IN THE SI DOMAIN ARE SELECTIVELY
ALKYLATED AND ARE REQUIRED FOR MYOSIN ATPASE ACTIVITY.
-I- MISCELLANEOUS: EACH MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT
-MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). IT CAN LATER BE
SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
STREED FOR MYOSIN SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-BALB/C, A/J, C57BL/6J, AND DBA/2J;
MEDLINE-92250040; PubMed-1577481;
Quinn-Laquer B.K., Kennedy J.E., Wei S.J., Beisel K.W.;
"Characterization of the allelic differences in the mous alpha-myosin heavy chain coding sequence.";
Genomics 13:176-188(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Swiss institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-91225025; PubMed=2026617; Gulick J., Subramaniam A., Neumann Fisolation and characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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STRAIN-BALB/C, A/J
             DOMAIN
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DOMAIN
                                                                                                                                                                                                                     SMART;
                                                                                                                                                                                                                                                    Pfam; PF00612; IQ: 1.
Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHBAVY.
ProDom; PD000355; myosin_head;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chain genes.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID-10090;
                                                                                                                                                              Myosin; Muscle protein; Coiled coil; 'ATP-binding; Methylation; Alkylation;
                                                                                                          DOMAIN
                                                                                                                           DOMAIN
                                                                                                                                           Calmodulin-binding;
                                                                                                                                                                                                   PROSITE;
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                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBFRAGMENT (S2).

MISCELLAREOUS: THE CARDIAC ALPHA ISOFORM IS A 'FAST' ATH
MYOSIN, WHILE THE BETA ISOFORM IS A 'SLOW' ATPASE.

SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
SIMILARITY: CONTAINS 1 IQ DOMAIN.
                                                                                                                                                                                                                     SM00015; IQ; 1.
SM00242; MYSC; 1.
                                                                                                                                                                                                     PS50096; IQ; 1.
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                                                                                                                                             Polymorphism
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               IQ.
COILED COIL (POTENT:
ATP.
ACTIN-BINDING.
ACTIN-BINDING.
CALMODULIN-BINDING
                                                                                                                             MYOSIN
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the
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                                                                                                                                                                Thick filament; Actin-binding; Multigene family;
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mouse cardiac
                 (BY SIMILARITY).
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                                                                                                                                                                            LKVSEEMKKSHDVIVDDLNK---KLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVF
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                                                  EEMEAKAELQRVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLAQRLQDAEEAVEAVN
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METHYLATION (TRI-) (POTENTIAL).
ALKYLATION (SH-1) (POTENTIAL).
ALKYLATION (SH-2) (POTENTIAL).
Y -> D.
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                              QVRSLQQQLADADRQHQEVIAIYR--THLLSAAQGHMD 1380
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                                                                  ARVRELENELEAEQKRNAE----SVKGMRKSERRIKELTYQTEEDKKNLMRLQDLVDKLQL
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Obsbiz;
20-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
20-AUG-2001 (Rel. 40, Last annotation update)
MYOSIN HEAVY CHAIN, NONMUSCLE TYPE A (CELLULAR MYOSIN
MYOSIN HEAVY CHAIN-A) (NMMHC-A). SEQUENCE FROM N.A.

Choi O.H., Park C., Itoh K., Adelstein R.S., Beaven M.A.;
Submitted (JUL-1995) to the EMBL/GenBank/DDBJ databases.

-i- FUNCTION: CELLULAR MYOSIN APPEARS TO PLAY A ROLE IN C
CELL SHAPE, AND SPECIALIZED FUNCTIONS SUCH AS SECRETI-MYH9\_RAT Q62812; Rattus norvegicus (Rat). Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; + NCBI\_TaxID=10116; CAPPING.

SUBUNIT: MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC-2).

REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, CYCLES OF A 28 RESIDUE REPEAT PATTERN COMPOSED OF 4 HEFT CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.

SIMILARITY: CONTAINS 1 IQ DOMAIN. STANDARD; Craniata; Vertebrata; Sciurognathi; Muridae; PRT; 1961 ₹ SECRETION Euteleostomi; ; Murinae; Rat HEAVY (MLC) AND 2 CYTOKINESIS, AND Rattus.

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Noved. Usage by and for (See http://www.isb-sib.

and for

EMBL; U31463; AAA74950.1;

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Pfam; PF0063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
PRODOM; PD000355; myosin_head; 1
SMART; SM00015; IO: 1.
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Myosin; ATP-binding; Calmodulin-binding; Actin-binding;
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                                                                                                                                     -KLIDVEREYERSLNETRPL------KRELENLKAKLAQHVK------PEEHEQLK---
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                                -ALESQLQDTQELLQEENRQKLSLSTKLKQMEDEKNSFREQLEEEEEEEAKRNL---
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     IPPERHEKEMMALKSNITELKKQLSELNKKCGEDQEKI-YSLMSENNDLKKTMSHQYVPV
                                                        LKVSEEMKKSHDVIVDDLNKKLS----DVTHKYTEKKLEMEKLLMENASLSKNVSRLETVF
                                                                                  AQLQELQVKFSE-GERVRTELADKVSKLQVELDSV---TGLLNQSDSKSSKLTKDFS---
                                                                                                            --- SRLEQKSGELGKRI-TELTSKNQTLQKEIEKVCLDNKLLTQ----QVNNLTTEMKNVP
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RA Cobley V. Cole C.G. Collier R.E., Connor R.E., Corroy D., Corby N. RA Cobley V. Cole C.G. Collier R.E., Connor R.E., Corroy D., Corby N. RA Cobleg V. Cox A.V., Davis J., Dawson E. Dhami P.D., Dockree C., RA Corafing K. French L., Garner A.A., Gilbert J.G.R., Goward M.E., RA Cottang K. French L., Garner A.A., Hall R., Hall R.J., Dockred C., RA Cottang K. French L., Garner A.A., Gilbert J.G.R., Goward M.E., RA Cottang K. French L., Garner A.A., Gilbert J.G.R., Goward M.E., RA Grafham D., Griffiths M.N., Hall R., Hall R., Hall-Tamlyn G., RA Grafham A., King A., Laird G.K., Langford C.F., Leversha M.A.,
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01-JUN-1994 (Rel. 29, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
MYOSIN HEAVY CHAIN, NONMUSCLE TYPE A (CELLULAR MYOSIN
TYPE A) (NONMUSCLE MYOSIN HEAVY CHAIN-A) (NMMHC-A).
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Mammalia; Eutheria;
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RA Lloyd C., Lloyd D.M., Martyn I.D., Mashreghi-Mohammadi M.,
RA Matthews L., McCann O.T., McClary J., McClaren S., Mcmurray A.A.,
RA Milne S.A., Mortimore B.J., Odell C.N., Pavitt R., Pearce A.V.,
RA Pearson D., Phillimore B.J., Phillips S.H., Plumb R.W., Ramsay H.,
RA Ramsey Y., Rogers L., Ross M.T., Scott C.E., Sehra H.K., Skuce C.D.,
RA Smalley S., Smith M.L., Soderlund C., Spragon L., Steward C.A.,
RA Sulston J.E., Swann R.M., Vaudin M., Wall M., Wallis J.M.,
RA Wilmer T.E., Wilming L., Wright C.L., Hubbard T., Bentley D.R.,
RA Wilmer T.E., Wilming L., Wright C.L., Hubbard T., Bentley D.R.,
RA Missyama S., Kudoh J., Shintzu N., Minoshima S., Kawasaki X., Sasaki T.,
RA Asakawa S., Kudoh J., Shintani A., Shibuya K., Yoshizaki Y., Aoki N.,
RA Mitsuyama S., Roe B.A., Chen F., Chu L., Crabtree J., Deschamps S.,
RA Lai H., Lao H.I., Lewis J., Lewis S., Lin S.-P., Loh P., Malaj E.,
RA Nguyen T., Pan H., Phan S., Qi S., Qian Y., Ray L., Ren Q., Shaull S.,
RA Nguyen T., Pan H., Phan S., Qi S., Qian Y., Ray L., Ren Q., Shaull S.,
RA Wu H., Yao Z., Zhan M., Zhang G., Chissoe S., Murray J., Miller N.,
RA Minx P., Fulton R., Johnson D., Bemis G., Bentley D., Bradshaw H.,
RA Hawkins J., Hinds K., Kemp K., Latreille P., Layman D., Ozersky P.,
RA Milson R., Emanuel B.S., Shakih T., Kurahashi H., Saitta S.,
RA Mison R., Emanuel B.S., Shakih T., Kurahashi H., Saitta S.,
RA Mison R., Emanuel B.S., Shakih T., Kurahashi H., Saitta S.,
RA Mison R., Emanuel B.S., Shakih T., Kurahashi H., Saitta S.,
RA Mison R., Kefar D., Seroussi E., Fransson I., Tapia I., Bruder C.E.,
RA O'Brien K.P., Wilkinson P., Bodenteich A., Hartman K., Hu X.,
RT The DNA Sequence of human chromosome 22.";
RP Septence G. L. 11337 Epon N. B.
RECOURSE C. L. 11337 Epon N. B.
RECOURSE C. L. 11337 Epon N. B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jamons M., Wang M., McBride O.W., Kay
Gdula D., Adelstein R.S., Weir L.;
"Human nonmuscle myosin heavy chains
on different chromosomes.";
Circ. Res. 69:530-530-530
                            MEDLINE-20428192; PubMed-10973259; Seri M., Cusano M., Gangarossa S., Caridi G., Bordo D., Lo Nigro Ghiggeri G.M., Ravazzolo R., Savino M., Del Vecchio M., d'Apolito Iolascon A., Zelante L.L., Savoia A., Balduini C.L., Noris P., Magrini U., Belletti S., Heath K.E., Babcock M., Glucksman M.J., Aliprandis E., Bizzaro N., Desnick R.J., Martignetti J.A.; "Mutations in MYH9 result in the May-Hegglin anomaly, and Fechtne
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 714-1960 FROM N.A.

MEDLINE-90138958; PubMed-1967836;
Saez C.G., Myers J.C., Shows T.B., Leinwand L.A.;

"Human nonmuscle myosin heavy chain mRNA: generation through alternative polyadenylylation.";

""" Man+1 Acad. Sci. U.S.A. 87:1164-1168(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-1337 FROM N.A.

MEDIJINE-92003925; PubMed-1912569;

MEDIJINE-92003925; PubMed-1912569;

Toothaker I.E., Gonzalez D.A., Tung N., Lemons R.S., le Beau M.M.

Arnaout M.A., Clayton i.K., Tenen D.G.;

Cellular myosin heavy chain in human leukocytes: isolation of 5'

CPURA clones, characterization of the protein, chromosomal

localization, and upregulation during myeloid differentiation.";

Blood 78:1826-1833(1991).
                        Sebastian syndromes.";
                                                                                                                                                                                                                       .₽
                                                                                                                                                                                                                                       "Human nonsyndromic hereditary deafness DFNA17 is nonmuscle myosin MYH9.";
                                                                                                                                                                                                                                                                                               MEDLINE=20489856; PubMed=11023810;
Lalwani A.K., Goldstein J.A., Kell
                                                                                                                                                                                VARIANTS MHA/FTNS/SBS
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MEDLINE-91316803;
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                                                                                                                                                                                                                     Genet.
      26:103-105(2000)
                                                                                                                                                     /SBS K-93; C-702; C-1165; H-1424 AND PubMed-10973259;
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modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                May-Hegglin anomaly.";
Nat. Genet. 26:106-108(2000).
-i- FUNCTION: CELLULAR MYOSIN APPEARS TO P
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VARIANTS MHA ILE-1155 AND LYS-1841.
MEDLINE-20428193; PubMed-10973260;
W-11av M.J., Jawien W., Ortel T. .....
                                                                  between
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kelley M.J., Jawien W., Ortel T.L., Kor "Mutation of MYH9, encoding non-muscle
                                                s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the El European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                                                                                                                                           CAPPING.
SUBUNIT: MYOSIN IS A HEXAMERIC PROTEIN
                                         non-profit
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NP_BIND
DOMAIN
MOD_RES
                                                                   Deafness.
                                                                                                              SMART; SM00015; IQ; 1.
SMART; SM00242; MYSC; 1.
PROSITE; PS50096; IQ; 1.
                                                                                                                                                   Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; myosin_tail; 1.
PRINTS; PR00193; myosin_head;
PF0DDm; PD000355; myosin_head;
                                                                                                                                                                                                              InterPro;
                                                                                           Coiled coil;
                                                                                                       Myosin; ATP-binding;
                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                         InterPro;
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L; M81105; AAA59888.1; -
L; M69180; AAA61765.1; -
L; M31013; AAA36349.1; -
P; P08799; IMND.
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IPR002928; Myosin_tail.
IPR002017; Spectrin.
IPR001609; myosin_head.
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MYOSIN HEAD-LIKE.
IQ.
COILED COIL (POTENTIAL).
ATP (POTENTIAL).
ACTIN-BINDING.
ALKYLATION (SH-1) (POTENTIAL).
                                                                                       family; Disease
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                                                                                                                                                                                                                                                                                                                                                                                                          TDVIIGFQACCRGYLARKAFAKRQQQLTAMKVLQRNCAAYLKL------RNW
                       VDDLNKKLSDVTHKYTEKKLEMEKLL.....MENASLSKNVSRLETVFIPP----ERH
                                                                                                                         AAQKNMALKKIRELESQISELQEDLESERASRNKAEKQKRDLGEELEALKTELEDTLDST
                                                                                                                                      REKRG---RKLTEMEGQL----KDLSAKLALSIPAEK------FENMKSLLSNELNE-
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                                           --- KRYKANLEKAKQTLENERGELANEVKYLLQGKGDSEHKRKKYEAQLQELQVKFNE--
                                                               ELGKRI-TELTSKNOTLOKEIEKVCLDNKLLTOOVNNLTTEMKNVPLKVSEEMKKSHDVI
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                                                                                                       KAKKLIDVEREYERSL-----NETRPLKRELENLKAKLAQHVKPEEHEQLKSRLEQKSG
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EAI -> RGH (IN REF. 3).

T -> M (IN REF. 4).

C -> Y (IN REF. 4).

C -> Y (IN REF. 4).

KG -> GR (IN REF. 2).

E -> EE (IN REF. 2).

T -> A (IN REF. 2).

S -> G (IN REF. 2).
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/FTId=VAR_010793.

T -> I (IN MHA).

/FTId=VAR_010794.
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Pred. No. 5.6e-11;
11; Mismatches 439;
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E -> K (II
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N -> K (IN MHA)
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/FTId=VAR_010795
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Q9UKX3; 095252;
Q9UKX3; 095252;
Q0-AUG-2001 (Rel. 40, Created)
20-AUG-2001 (Rel. 40, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation updat
20-AUG-2001 (Rel. 40, SKELETAL MUSCLE, EXTRAC
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           J. Mol.
[2]
                      TISSUE=Extraocular muscle;
MEDLINE=99318869; PubMed=1038858;
Weiss A., Schiaffino S., Leinwand L.A.;
"Comparative sequence analysis of the coheavy chain family: implications for fully. Mol. Biol. 290:61-75(1999).
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                                                                                                                                           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                                             Craniata; Vertebrata; Catarrhini; Hominidae;
                                     functional
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EXTRAOCULAR
                                      human sarcomeric diversity.";
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CC -!- FUNCTION: MUSCLE CONTRACTION.

CC -!- FUNCTION: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

CC -!- SUBUNIT: MUSCLE MYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

CC -!- SUBCELULAR LOCATION: THICK FILAMENTS OF THE MYOFIBRILS.

CC -!- SUBCELULAR LOCATION: THICK FILAMENTS OF THE MYOFIBRILS.

CC -!- DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES, CC -!- DOMAIN: TWO CYSTEINE RESIDUES IN THE SI DOMAIN ARE SELECTIVELY CC CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

CC -!- PTM: TWO CYSTEINE RESIDUES IN THE SI DOMAIN ARE SELECTIVELY CC ALKYLATED AND ARE RESULTED FOR MYOSIN ATPASE ACTIVITY.

CC -I- MISCELLANEOUS: EACH MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). IT CAN LATER BE CC SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
                                                                                                                                Query Match 8.6%; Score 603.5; DB 1; Best Local Similarity 23.1%; Pred. No. 5.9e-11; Matches 277; Conservative 220; Mismatches 415;
                                                                                                                                                                                                                                                                                           NP_BIND
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00015; IQ; 1.
SMART; SM00242; MYSC; 1.
PROSITE; PS50096; IQ; 1.
Myosin; Muscle protein; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                         MOD_RES
SEQUENCE
                                                                                                                                                                                                                                                          MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                           Calmodulin binding; ATP-binding; Methylation; Alkylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
PTCDDom; PD000355; Myosin_head; 1.
                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00612; IQ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF111782; AAD29948.1; -. EMBL; AF075248; AAC83241.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-99026150; PubMed-9806854; Winters L.M., Briggs M.M., Schachat F.; "The human extraocular muscle myosin heavy chain gene (MYH13) maps to the cluster of fast and developmental myosin genes on chromosome 17.";
                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000048;
                         338 LLAAKEKQHEESLRTIEALKSRFKYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTG 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
918 LLEAKVKELTERL----
                                                                                284 QDLEIENEDL---KERLRKIQQEQRILLDKVNGLQLQLNEEVMVADDLESEKE---KLKS 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Extraocular muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBFRAGMENT (S2).
SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.
SIMILARITY: CONTAINS 1 IQ DOMAIN.
                                                          EDFERTKEELARSEARRKELEEKMVSLLQEKNDLQLQVQSETENLMDAEERCEGLIKSKI 917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  603487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P08799; 1MND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR002928;
IPR001609;
                                                                                                                                                                                                                                                                                                                                                                                                    family.
                                                                                                                                                                                                                           785
843
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761
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                                                                                                                                                                                                                                                          784
814
1938
186
681
775
130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IQ.
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myosin_head.
                                                                                                                                                                                                                        223678
                                                                                                                                                                                                                                                                                                                                                                                                                            Coiled coil; Thick filament; Actin-binding;
                                                                                                                                                                                          IQ.

COILED COIL (POTENTIAL).

ATP (POTENTIAL).

ACTIN-BINDING (BY SIMILARITY).

ACTIN-BINDING (BY SIMILARITY).

METHYLATION (TRI-) (POTENTIAL).

ALKYLATION (SH-1) (POTENTIAL).

ALKYLATION (SH-2) (POTENTIAL).

78 MW; 1F6D006416381CD5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                MYOSIN HEAD-LIKE.
                                                                                                                                                                 Length 1938;
                                                                                                                                  Indels
                                                                                                                                287; Gaps
                                                                                                                                  47;
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359 892	1313 RLKQALNGLSQLTYGSGSPSKROSQLIDSLQQQVRSLQQQLADADRQ 1:::	Ωу
1833	LDVE	DЬ
1312	TTITELORRIQESAKQIEAKDNKITELLNDVE	Qy
1779	720 LHSQNTSLINTKKKLEADIAQCQAEVENSIQESRNAEEKAKKAITDAAMMAEELKKEQDT	Db
1254	SDLETQISDLNEKLANLNRKYEEVCEEVLHAKKKELSA	γQ
1210 1719	1100 REFERENCE LIANSURER RESSONTED SKILOSE LOTT KOALKKLET REVVOLS	문 5
1667	1 SRNDALRLKKKMEGDLNEMEIQLGHSNRQMAETQRHLRTVQGQLKDSQLHLDDALRS	} }
1155	096 PLEQVESLKKSLSGTIETLKEELKTKQRCYEKEQQTVTQLRQMLENQKNSSVPLAEHLQV	Qy
1610	1554 SLEHEESKILRVQLELSQVKSELDRKVIEKDEEIEQL-KRNSQRAAEALQSVLDAEIR	Db
1095	LAAQTLLQKQHV	ρy
1553	1501 TLRRENKNLQEEISDLTEQIAETGKNLQEAEKTKKLVEQEKSDLQVALEEVEG	рb
1036	TSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIEN	9
1500	AYEEVVDQLE	рЬ
976	KKSQEEIVTLHEEIAAQKRELDTIQECIKLKYAPIISLEE	γo
1442	:  DLERSHTA	DЬ
921		Qy
1382	ETD -	DЪ
875	817 CGEDQEKIYSLMSENNDLKKTMSHQYVPVKTHEEIKTALSSTLDKTNRELVDVKKKCE-D	Qy
1328	HDLNMQKARLQTQNGELSHRVEEKESLISQLTKSKQALTQQLEELKRQMEEETK-	DЬ
816	763LEMEKLLMENASLSKNVSRLETVFIPPERHEKEMMALKSNITELKKQLSELNKK	Qy
1272	1213 NIQRVKOKLEKEKSELKMEIDDMASNIEALSKSKSNIERTCRTVEDQFSEIKAKDEQQTQ	DЬ
762	720 NLTTEMKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKK	Q
1212	1154 LEEASGATSAQI-EMNKKREAEFQKMRRDLEEATLQHEATAATLRKKQADSVAELGEQID	Дb
719	679 LEOKSGELGKRITELTSKNOTLOKEIEKVCLDNKLLTQQVN	Qy
1153	1102 QVHSLQFQKKIKELQARIEELEEBIEAEHTLRAKIEKQRSDLARELEEISER	В
678	LLSN	Qy
1101	1049 RADLERAKRKLEGDLKMSQESIMDLENEKQQIEEKLKKKEFELSQLQARIDDE	Db
618	KELSMCELEREKRGRKLTEMEGQLKDLS	Qγ
1048	997 TKEKKSLQEAHQQTLDDLQVEDKVNGLIKINAKLEQQTDDLEGSL-EQEKKL	В
576	YEGASA	Qy
996	943 KKRNLEDKCSSLKRDIDDLELTLTKVEKEKHATENKVKNLSEEMTALEENISKL	рb
517	EQIKQLEDALKDVQKRMYESEGKVKQMQTHFLALK	Qy
942	931	Db
457	398 MPVHMQSRSMLRPLELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQNELAHKVA	Qy

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RESULT
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01-OCT-1989
20-AUG-2001
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P02564;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-WISTAR: TISSUE-THE MEDITINE-85179510; PubMed-6241892; MEDITINE-85179510; PubMed-6241892; Mahdavi V., Lompre A.M., Chambers A.P., Nadai-Ginard B.; Mahdavi V., Lompre A.M., Chambers Transitions during development "Cardiac myosin heavy chain isozymic transitions during development "Cardiac myosin heavy chain isozymic transitions during the level of mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mahdavi V., Periasamy M., Nadal-Ginard "Molecular characterization of two myos in the adult heart."; Nature 297:659-664(1982).
                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                McNally E.M., Kraft R., Bravo-Zehnder M., Taylor D., "Full-length rat alpha and beta cardiac myosin heavy Comparisons suggest a molecular basis for functional J. Mol. Biol. 210:665-671(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID-10116;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota;
                  EMBL; X15939;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1871-1935 FROM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic Acids Res. 17:7529-7530(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Complete nucleotide sequence of full length cardiac myosin heavy chain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kraft R., Bravo-Zehnder M., Taylor D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-90016823; PubMed-2798112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus
                                                                                                                                                                                                                                             AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).

SUBCELLULAR LOCATION: THICK FILAMENTS OF 12 MLC-2).

DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28-RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPPAPEPTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

PTH: TMO CYSTEINE RESIDUES IN THE S1 DOMAIN ARE SELECTIVELY ALKYLATED AND ARE REQUIRED FOR MYOSIN ATPASE ACTIVITY.

MISCELLANEOUS: EACH MYOSIN HEAVY CHAIN CAN BE SPLIT INTO 1 LIGHT MEROMYOSIN (LMM) AND 1 HEAVY MEROMYOSIN (HMM). IT CAN LATER BE SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 POOLS.

SUBFRAGMENT (S2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
                                                                                                                                                                                                                                                                                                                                                                                                               . Heart J. 5:181-191(1984).
FUNCTION: MUSCLE CONTRACTION.
SUBUNIT: MUSCLE CONTRACTION.
SUBUNIT: MUSCLE WYOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS
HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC-2).
AND 2 REGULATORY LIGHT CHAIN SUBUNITS (MLC-2).
                                                                                                                                                                                  MISCELLANEOUS: THE CARDIAC ALPHA ISOFORM IS MYOSIN, WHILE THE BETA ISOFORM IS A 'SLOW' A SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR SIMILARITY: CONTAINS 1 IQ DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEAVY CHAIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metazoa;
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(Rel. 12,
(Rel. 40,
   CAA34065.1; -.
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annotation updat
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MUSCLE BETA ISOFORM
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Sciurognathi; Muridae;
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S A 'SLOW' ATPASE.
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; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Leinwand L.A.;
y chain sequences.
l differences.";
                                                                                                                                                                                                     DOMAIN
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SMART; SM00242; MYSC; 1.
PROSITE; PS50096; IQ; 1.
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Pfam; PF001576; myosin_tall; 1.
PRINTS; PR00193; mYOSINHEAVY.
PRODOM; PD000355; myosin_head;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myosin; Muscle protein; Co
ATP-binding; Methylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000048; IQ.
InterPro; IPR002928; Myosin_tail.
InterPro; IPR00169; myosin_head.
Pfam; PF00612; IQ; 1.
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PIR; A02989; A02989
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                                                                                                                                                                                                                                                                               DLK-----ERLRKIQQ--EQRILLDKVNGLQLQLNEEVMVADDLESEKEKLKSLLAAKEK
                         LSRMEFKKLLERRDSLLIIQWNIRAFMGYKNWPWMKLYFKIKPLLKSAETEKEMANMKEE
                                                                                                                                                                                                                                          QHEESLRTIEALKSRFK-----YFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGM
                                                                                                                                                                                                                                                              QLRCNGVLEGIRICRKGFPNRILYGDFRQRYRILNPAAIPEGQFIDSRKGAEKLLGSLDI
                                                                                                        EAKVKEMTERLEDEEEMNAELTAKKRKLEDECSELKRDIDD----LELTLAKVEKEKHAT
                                                                                                                                                                                                      PVHMQSRSML-;----
                                                                                                                                                                                                                       DH------SRIITRIQAQSRGV
                                                                ENKYKNLTEEMAGLDEIIVK--LTKEKKALQEAHQQALDDLQAEEDKVNTLTKAKVKLE-
                                                                                     EGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQLKD-------
                                                                                                                                            FGRVKDALEKSEARRKELEEKMVSLLQEKNDLQLQVQAEQDNLADAEERCDQLIKNKIQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P08799;
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                -QASYSENEILKKELEAMRTF-----
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                                                                                                                           -AHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYES
                                                                                                                                                                                                                                                                                                                                                            .68;
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          -GRKLTEMEGQLKDLSAKLALSIPAE-KFENMKSLLSNELN
                                                                                                                                                                                                                                                                                                                                          273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alkylation;
                                                                                                                                                                                                                                                                                                                                                                                       ALKYLATION (SH-2) (PO)
IRK -> VRR (IN REF. 3).
D -> H (IN REF. 3).
N -> K (IN REF. 3).
T -> N (IN REF. 3).
R -> K (IN REF. 3).
= = ::
                                                                                                                                                                                                                                                                                                                                                                                                                                       METHYLATION (TRI-) (FOUNTY ALKYLATION (SH-1) (POUNTY ALKYLATION (SH-2) (POUNTY ALKYLATION (IN REF. 3
                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MYOSIN HEAD-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coil; Thick filament;
lation; Multigene fami
                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                   603;
No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COIL
                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                    .le-11;
                                                                                                                                                                                                        -----RPL----
                                                                                                                                                                                                                                                                                                                                            493;
                                                                                                                                                                  -----CDSAKQDRLKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                            Length 1935;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family;
                                                                                                                                                                                                                                                                                                                                                                                          CRC64
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                                                                                       -MKVKYEG
                                                                                                                                                                                                                                                                                                                                            318;
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                                                                                                                                                                                                                                                                751
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RESULT
MYH7_PJ
ID
AC
PY
DT 11
DT 2
DT 2
DT 2
DT 2
DT 4
GN M
GN M
GN M
GN M
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                                                                                           MYH7_PIG
P79293;
15-DEC-1998 ()
15-DEC-1998 ()
20-AUG-2001 ()
MYOSIN HEAVY
                                                                                                                                                                                             _PIG
Sus scrofa (Pig).

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
NCBI_TaxID=9823;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247
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                                                                                                                                                                                                                                                                         QLIDSLQQQVRSLQQQLADADRQHQEVIAIYR--THLLSAAQGHMD |:| || :|:: :| || :|: ||
                                                                                                                                                                                                                                                                                                                     KKQLQKLEARVRELENELEAEQKRNAE---SVKGMRKSERRIKELTYQTEEDRKNLLRLQ
                                                                                                                                                                                                                                                                                                                                                                                                    ANLNRKYEE-VCEEVLHAK--KKELSAKDEKELLHFSIEQEIKDQQERCDKS
                                                                                                                                                                                                                                                         DLVDKLQLKVKAYKRQAEEAEEQANTNLSKFRKVQHELDEAEERAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LEKIRKQLEAEKLELQSALEEAEASLEHE---EGKILRAQLEFNQIKAEIERKLAEKDEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CKQENDKLKKEILTLQKDLKDKNVHIENSYETERALSRKTEELNRQLKDLLQKYTEAKKE 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSQKEARSIST -- ELFKLKNAYBESLEHLE-TFKRENKNLQEEISDLTEQLGSTGKSIHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AKCSSLEKTKHRLQNEIEDLMVDVERSNAAAAALDKKQRNFDKILVEWKQKYEESQSELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EISERLEEAGGATSVQIEMNKKREA-EFQKMRRDLE--EATL---
                                                                                                                                                                                                                                                                                                                                                   LTTTTELQRRIQESAKQIEAKDNKITELLNDVERLKQALNGLSQLTYGSGSPSK--
                                                                                                                                                                                                                                                                                                                                                                                  RNAEEKAKKAITDAAMMAEELKKEQDTSAHLERMKNNMEQTIKDLQHRLDEAEQIALKGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                AVVEQTERS-RKLAEQELIETSERVQLLHSQNTSLINQKKKMDADLSQLQTEVEEAVQEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQTVTQLRQMLENQKNSSVPLAEHLQVKEAFEKEVGIIKASLREKEEESQNKTEEVSKLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEQAKRNHLRVVDSL----QTSLDAETRSRNEALRVKKKMEGDLNEMEIQLSHANRMAAEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEKLVEENAKOTSEILAAOTLLOKOHVPLEQVESLKKSLSGTIETLKEELKTKORCYEKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EIAAQKRELDTIQECIKLKYAPIISLEECERKFKATEKELKEQLSQQTQKYNTSEEEAKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THEEIKTALSSTLDKTNREL-----VDVKKKCEDINQEFVK----IKDENEILK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMMALKSNITELK - - - - KQLSELNKKCGEDQEK - - - - IYSLMSENNDLKKTMSHQYVPVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KSHDVIVDDLNK----KLSDVTHKYTEKKLEMEKLLMENASLSKNVSRLETVFIPPERHEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KHADSVAELGEQIDNLQRVKQKLEKEKSEFKL-----ELDDVTSNMEQI-IKAKANLE 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FELNALNARIEDEQALGSQLQKKLKELQARIEELEEELEAERTARAKVEKLRSDLSRELE 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QKQVKSLQSLL---KDTQIQLDDAVRANDDLKENIAIV----ERRNNLLQAELEELR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EETEAKAELQRVLSKANSEVAQWRTKYETDAIQRTEELEEAKKKLAQRLQDAEEAVEAVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E--ALISQLTRGKLTYTQQLEDLKRQLEEEVKAKNALAHALQSARHDC-DLLREQY---E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KMCRTLEDQMNEHRSKAEETQRSVNDLTRQRAKLQTENGELSRQLD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EKAKKL-----IDVEREYERSLNETRPLKRELENLKAKLAQHVKPEEHEQLKSRLEQ 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RNLENTQNQVKAEYISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHE 948
                                                                                             Rel. 3'
8 (Rel. 3'
1 (Rel. 4'
7Y CHAIN,
                                                                                                                                                                           STANDARD;
                                                                                           37, Created)
37, Last sequence update)
40, Last annotation update)
1N, CARDIAC MUSCLE BETA ISOFORM
                                                                                                                                                                           1935
                                                                                                                                                                           Ş
                                                                                             (MYHC-BETA)
                                                                                                                                                                                                                                                                                     1380
                             Euteleostomi;
Sus.
                                                                                                                                                                                                                                                          1911
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Best Local S
Matches 266
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C --- SUBUNIT: MUSCLE CONTRACTION.

C --- SUBUNIT: MUSCLE WOSIN IS A HEXAMERIC PROTEIN THAT CONSISTS OF 2

C HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

C HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

C HEAVY CHAIN SUBUNITS (MHC), 2 ALKALI LIGHT CHAIN SUBUNITS (MLC)

C HEAVY CHAIN SUBUNITS (MLC-2).

C --- SUBCELLULAR LOCATION: THICK FILAMENTS OF THE MYOFIBRILS.

C --- DOMAIN: THE RODLIKE TAIL SEQUENCE IS HIGHLY REPETITIVE, SHOWING CYCLES OF A 28 RESIDUE REPEAT PATTERN COMPOSED OF 4 HEPTAPEPTIDES, CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

C CHARACTERISTIC FOR ALPHA-HELICAL COILED COILS.

C --- THOU CYSTEINE RESIDUES IN THE SI DOMAIN ARE SELECTIVELY ALKYLATED AND ARE REQUIRED FOR MYOSIN ATPASE ACTIVITY.

C ALKYLATED AND ARE REQUIRED FOR MYOSIN ATPASE ACTIVITY.

MEROMYOSIN (LMM) AND I HEAVY MEROMYOSIN (HMM). IT CAN LATER BE SPLIT INTO 1 LIGHT MEROMYOSIN (LMM) AND 1 ROD-SHAPED

SPLIT FURTHER INTO 2 GLOBULAR SUBFRAGMENTS (S1) AND 1 ROD-SHAPED
                                                                                                                                                                                                                                                                                                                      MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00612; IQ; 1.
Pfam; PF00063; myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS: PR00193; MYOSINHEAVY.
PRODOM: PD000355; myosin_head;
SMART; SM00015; IO; 1.
SMART; SM00242; MYSC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U75316; AAB37320.1; ...
InterPro; IPR000048; IQ.
InterPro; IPR002928; Myosin_tail.
InterPro; IPR001609; myosin_head
                                                                                                                                                                                                                                                                                                                                                                                                               NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                              NIAMOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Calmodulin-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP-binding; Methylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS50096; IQ; 1.
Myosin; Muscle protein; Coiled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <del>-</del>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A
                                                                                                                                                           Local Si
hes 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBFRAGMENT (S2).

MISCELLANBOUS: THE CARDIAC ALPHA ISOFORM IS A 'FAST' ATPASE MYOSIN, WHILE THE BETA ISOFORM IS A 'SLOW' ATPASE.

SIMILARITY: CONTAINS 1 MYOSIN-LIKE GLOBULAR HEAD DOMAIN.

SIMILARITY: CONTAINS 1 10 DOMAIN.
                                                                                                                                     EKEMATMKEEFG-----RLKEALEKSEARRKELEEKMVSLLQEK------NDLQLQVQA
                               RKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPLELALPNQASYSENEILKKELEAM
                                                                  E---QDNLSDSEERCDQLIKNKIQLEAKVKEMTERLEDEEEMNA
                                                                                                   EVMVADDLESEKEKLKSL-----LAAKEKQHEESLRTIEALKSRFKYFESDHLGSGSHF
                                                                                                                                                                                                             h 8.6%; Score 602; DB 1;
Similarity 22.0%; Pred. No. 6.5e-11;
56; Conservative 260; Mismatches 451
ELTAKKRNV - - - EDECS - -
                                                                                                                                                                                                                                                                                     1 780
1 1935
1 1935
677
771
129
695
705
705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alkylation;
                                                                                                                                                                                                                                                                                                               IO.

COILED COIL (POTENTIAL).

ATP (POTENTIAL).

ACTIN-BINDING.

ACTIN-BINDING.

ACTILATION (TRI-) (POTENTIAL).

ALKYLATION (SH-1) (POTENTIAL).

ALKYLATION (SH-2) (POTENTIAL).
                                                                                                                                                                                                                                                                                                        ₹.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   coil; Thick filament;
--ELKRDIDDLELTLAK----
                                                                                                                                                                                                                                                                                                        149CDBFD910DBB08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEAD-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Multigene
                                                                                                                                                                                                                 451;
                                                                                                                                                                                                                                            Length 1935;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family;
                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Actin-binding;
-VEKEKHAT
                                                                                                                                                                                                               232;
                                                                                                                                                                                                             Gaps
                               434
                                                                  934
                                                                                                       374
                                                                                                                                        893
                                                                                                                                                                          320
                                                                                                                                                                                                               49;
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	1372 LSAAQGHMD 1380           1903 LDEAEERAD 1911	
1371 1902	1317 ALNGLSQLTYGSGSPSKRQSQLIDSLQQQVRSLQQQLADADRQHQEVIAIYRTHL : : :   :                   :  :	
1316 1842	1265 IEGEIKDQOERCDKSLTTITELQRRIQESAKQIEAKDNKITELLNDVERLKQ	
1264 1785	1211KYKATKSDLETQISDLNEKLANLNRKYEE-VGEEVLHAKKKELSAKDEKELLHFS	
1210 1725	1166 IKASLREKEEESQNKTEEVSKLQSEIQNTKQALKKLETREVVDLS	
1165 1673	1106 SLSCTIETLKEELKTKQRCYEKEQOTVTQLRQMLENQKNSSVPLAEHLQVKEAPEKEVGI	
1105 1616	1046 RKTEELNROLKDLLQKYTEAKKEKEKLVEENAKOTSEILAAQTLLQKQHVPLEQVESLKK	
1045 1559	SQLSQQTOKYNTSEEEAKKCKQENDKLKKEILTLQKDLKDKNVHIENSYETERALS	
985 1502	926 QDNSAEILAKYKKSQEEIVTLHEEIAAQKRELDTIQECIKLKYAPIISLEECERKFKATE	
925 1445	YVKIKDENEILKRHLENTONQVKAEYISLREHEEKMSGLRKSMKKV	
875 1385	826 SLMSENNDLKKTMSHQYVPVKTHEEIKTALSSTLDKTNRELVDVKKKCED	
825 1331	774 SLSKNVSRLETVFIPPERHEKEMMALKSNITELKKQLSELNKKGGEDQEKIY	
773 1285	717 QVNNLTTEMKNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEMEKLLMENA ::::::  :	
716 1226	661 AKLAQHVKPEEHEOLKSRLEQKSGELGKRITELTSKNQTLQKEIEKVCLDNKLLTQ	
660 1180	NMKSLLSNELNEKAKKLIDVEREYERSLNETRPLKRELENLK	
609 1123	551 QIKONEMLVEEFKRDEGKLMEENKRLQKELSM-CELEREKRGRKLTEMEGQLKDLSAKLA :          : : :   :   : : : : : : :   :   : : : : : : :   :   : : : : : : : :   :   : : : : : : :   :   : : : : : : : : :   :   : : : : : : : : : : : :   :   : : : : : : : : : : : : : : : : :   :   : : : : : : : : : : : : : : : : : : : :	
550 1071	495 EGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQLKDMKVKYEGASAEVGKLRN	
494 1013	435 RTFCDSAKQDRLKLQNELAHKVAECKALALECERVKEDSDEQIKQLEDALKDVQKRMYES	

Search completed: April 10, 2002, 18:11:32 Job time: 165 sec

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Title:
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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1: sp_archea:*
2: sp_bacteria
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Gapop 10.0 , Gapext 0.5
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7039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
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sp_rodent:*
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sp_mammal:*
sp_mhc:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

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## ALIGNMENTS

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UVEAL AUTOANTIGEN.
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Eukaryota; Metazoa; Chord
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Yamada K., Senju S., Nakatsura T., Murata Nakamura S., Ohno S., Negi A., Nishimura Y.
"Identification of a novel autoantigen UACP panuveitis.";
Biochem. Biophys. Res. Commun. 280:1169-117
EMBL; AR322915; AAG49576.1;
SEQUENCE 1449 AA; 165881 MW; 7A73CA4AEC
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Best Local
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EMBL; X99145; CAC14169.1;
InterPro; IPR002110; ANK
Pfam; PF00023; ank; 6.
SMART; SM00248; ANK; 6.
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Maenhaut C.;
                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS50088; ANK_REPEAT; 5. PROSITE; PS50297; ANK_REP_REGION; SEQUENCE 1388 AA; 159459 MW;
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Mammalia; Eutheria;
NCBI_TaxID=9615;
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YSENDLLKKELEAMRTFCESAKQDRLKLQNELAHKVAECKALGLECERIKEDSDEQIKQL
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1186; Conservative
KYFESDHLGSGSHFRKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSMLRPLELALPNQAS
                                                                                                                                                                                                                   TASENSNKGRELWKKGPSLQQRNLSQMLDEVNTKSNQREHQNIQDLEIENEDLKERLRKI
                                          ASAEVGKLRNQIKQNEMLVEEFKRDEGKLMEENKRLQKELSMCELEREKRGRKLTEMEGQ
                                                                   EDALKDVQKRMYESEGKVKQMQTHFLALKEHLTSDAATGNHRLMEELKDQLKDMKVKYEG
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                                  ASAEVGKLRNQIKQNELLVEQFRRDEGKLVEENKRLQKELSMCETERDKKGRRVAEVEGQ
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V., Radulescu
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%; Pred. No. 3.9e-209;
108; Mismatches 77;
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Q9HCL1
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AC Q9HCLL;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 17, Last sequen
DT 01-JUN-2001 (TrEMBLrel. 17, Last annota
DE KIAA1561 PROTEIN (FRAGMENT).

GN KIAA1561.
OC Eukaryota; Metazoa; Chordata; Craniata;
OC Mammalia; Eutheria; Primates; Catarrhin
OX NCBL_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX Nagase T., Kikuno R., Nakayama M., Hiro
RT "Prediction of the coding sequences of
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                                                  Craniata; Vertebrata; Catarrhini; Hominidae;
  M., Hirosawa M., Ohara O.;
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DNA Res. 7:273-281(2000).

EMBL; ABO46781; BAB13387.1; -.

Interpro; IPR000727; T_SNARE.

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| MSSLSQSMRKVQDSNAEILANYRKGQEEIVTLHAEIKAQKKELDTIQECIKVKYAPIVSF
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; Pred. No. 1.9e-172;
77; Mismatches 63;
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Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y., Nishikawa T., Nagai K., Sugano S., Shiratori A., Sudo H., Wagatsuma M., Hosoiri T., Kaku Y., Kodaira H., Kondo H., Sugawara N., Takahashi M., Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi Swatanabe S., Kimura K., Murakami K., Ishii S., Kawai Y., Saito K., Yamamoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y., Ninomiya K., Iwayanagi T.;
"NEDO human cDNA sequencing project.";
Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AK000990; BAA91457.1; ".
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Q9NWC6;
Q1-CCT-2000 (TrEMBLrel. 15, Created)
Q1-CCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-MAR-2001 (TrEMBLrel. 16, Last annotation update)
HYPOTHETICAL PROTEIN (FRAGMENT).
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SEQUENCE
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                              QTLQKETEKYYLDNKLLKEQAHNLTTEMKNHYVPLKVSEDMKKSHDATTDDLNRKLLDVT
                                                                                                                                                                                                                                                                                                                       QTLQKEIEKVCLDNKLLTQQVNNLTTEMKN--VPLKVSEEMKKSHDVIVDDLNKKLSDVT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QSQLIDSLQQQVRSLQQQLADADRQHQEVIAIYRTHLLSAAQGHMDEDVQAALLQIIQMR 1394
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38; Conservative 4
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Primates; Catarrhini; Hominidae;
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Pred. No. 7.7e-72;
8; Mismatches 47;
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Best Local S
Matches 371
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Homo sapiens (Human).
Tervota; Metazoa; Chordata;
Tehoria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-JUN-2001 (TrEMBLrel. 17, KIAA1334 PROTEIN (FRAGMENT).
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Mammalia; Eutheria;
NCBI_TaxID=9606;
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26.1%;
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SEQUENCE FROM N.A.

C TISSUE-BRAIN;

X MEDLINE-20181126; PubMed-10718198;

X MEDLINE-20181126; PubMed-10718198;

X Nagase T., Kikuno R., Ishikawa K., Hirosawa M., Ohara O.;

A Nagase T., Kikuno R., Ishikawa K., Hirosawa M., Ohara O.;

The complete sequences of 150 new cDNA clones from brain which

Tor large proteins in vitro.*;

DNA Res. 7:65-73(2000).

EMBL: AB037755; BAA92572.1; -.

R InterPro: IPR002110; ANK.

R Pfam; PF00023; ank; 7.

R SMART; SM00248; ANK_REP_REGION; 1.

PROSITE; PS50088; ANK_REP_REGION; 1.

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O SEQUENCE 989 AA; 111029 MW; EA84FB9926E233F5 CRC64;
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Last annotation update)
Score 1252.5; DB
Pred. No. 1.1e-37;
1; Mismatches 332
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Catarrhini; Hominidae;
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Indels
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                                                                                                                                                                       KYEEVCEEVLHAKKKELSAKDEKE---LLHFSIEQEIKDQQERCDKSLTTITELQRRIQE
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                                          SSKLEEDKDKKI NEMSKEVTKLKEALNSLSQLSY - STSSSKRQSQQLEALQQQVKQLQNQ
                                                                           SAKQIEAKDNKITELLNDVERLKQALNGLSQLTYGSGSPSKRQSQLIDSLQQQVRSLQQQ
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Submitted (MAY-1999) to the EMBL/Ge EMBL, AF155135, AAF44722.1; -.
Interpro; IPR002110; ANK.
Pfam; PF00023; ank; 7.
SMART; SM00248; ANK; 5.
PROSITE; PS50088; ANK_REPEAT; 5.
PROSITE; PS50098; ANK_REP_REGION; 1
SEQUENCE 980 AA; 110041 MW; 67E
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
NOVEL RETINAL PIGMENT EPITHELIAL CELL PROTEIN.
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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26.0%; Pred. No. 1.5e
tive 211; Mismatches
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OSEP71;

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QSEP71;

O1-MAR-2001 (TrEMBLrel. 16, Created)

O1-MAR-2001 (TrEMBLrel. 16, Last sequence update)

O1-JUN-2001 (TrEMBLrel. 17, Last annotation update)

O1-JUN-2001 (ANKYCORBIN).
    Mus musculus (Mouse)
Eukaryota; Metazoa; (
Mammalia; Eutheria; /
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A Peng Y.-F., Mandal K., Sakisaka T., Okabe N., Yamamoto Y.,
A Peng Y.-F., Mandal K., Sakisaka T., Okabe N., Takai Y.;
A Yokoyama S., Mizoguchi M., Shiozaki H., Monden M., Takai Y.;
A Takyoorbin: a novel actin cytoskeleton-associated protein. Takyoorbin: a novel actin cytoskeleton-associated protein. Takyoorbin: A NEZ 1466; AAG25937.1; -.
R EMBL; AF203315; AAG24483.1; -.
R EMBL; AF203315; AAG24483.1; -.
R EMBL; AF203315; AAG24483.1; -.
R MGD; MGI:1922896; 1700020L11Rik.
R InterPro; IPR002110; ANK.
R Pfam; PF00023; ank; 7.
R PFAM; PF00023; ank; 7.
R PFAM; PR00248; ANK; 6.
R PROSITE; PS50297; ANK_REP_REGION; 1.
SEQUENCE 979 AA; 108852 MW; B2E8C016D80237C4 CRC64;
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Best Local Similarity
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Kutty R.K., Kutty G., Samuel W., Duncan T., Bridges C.C.,
El-Sherbeeny A., Magineni C.N., Smith S.B., Wiggert B.;

"Molecular characterization and developmental expression
novel gene induced by retinoic acid.";
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                                                            ENGSDLSQKLKETQSKYEEAMKEVLSVQKQMKL-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----KTASENSNKGRELWKKGPSLOORNLSOMLDEVNTKSNOREHONIODLEIENEDL
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                                                                                    -ELKDQLKDMKVKYEGASAEVGKLRNQIKQNEMLVEEFKRDEGKLMEENKRLQKELS
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Indels Length

510;

Gaps

28;

74

Takai Y.;

of.

NORPEG:

-GLLSQES-----

641 516 476

524 431 464

419 404 361 345 293 254 239 194 196

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RESULT
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Q9CZL8;
Q9CZL8;
01-JUN-2001 (TrEMBLrel. 17, C
01-JUN-2001 (TrEMBLrel. 17, L
01-JUN-2001 (TrEMBLrel. 17, L
2700059D02RIK PROTEIN.
SEQUENCE FROM N.A.
STRAIN-C57BL/6J; TISSUE-EMBRYO;
MEDLINE-21085660; Pubmed-11217851;
Kawai J., Shinagawa A., Shibata K.,
                                                                            Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Last sequence update)
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                                                                            Craniata; Vertebrata; |
Sciurognathi; Muridae;
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 Yoshino
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RA Aizawa K., Izawa M., Nishi K., Riyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Riyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubil F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Schriml L.M., Staubil F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Biake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchioni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Sasaki H., Sato K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Hyushizaki Y., Coshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
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Best Local Similarity
Piam; PF00023; ank; 4.

SMART; SM00248; ANK; 4.

PROSITE; PS50088; ANK_REPEAT; 4.

PROSITE; PS50297; ANK_REP_REGION;

PROSITE; PS50297; ANK_REP_REGION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Functional annotation of a full-length mouse cDNA collection.";
Nature 409:685-690(2001).

EMBL; AK012454; BAB28249.1; -..
MGD; MGI:1919815; 2700059D02Rik.
Interpro; IPR00072; T_SNARE.
Interpro; IPR00072; T_SNARE.
SEQUENCE 227 AA; 26134 MW; 28031C570B47ABID CRC64;
                                                                                                                                                                       Submitted (DEC-2000) to the EMBL; AL162272; CAC19649.1; InterPro; IPR002110; ANK.
                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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85.0%;
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Last sequence update)
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Pred. No. 6.1e-29;
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                   01CBF9BADB894872
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-EYISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHEEI
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09UPS8;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update,
KIAA1074 PROTEIN.
                                                                                                                                                                                                                                                         Kikuno R., Nagase T., Ishikawa K., Hirosawa M., Miyajima N., Tanaka A., Kotani H., Nomura N., Ohara O.; "Prediction of the coding sequences of unidentified human genes. The complete sequences of 100 new cDNA clones from brain which co for large proteins in vitro."; DNA Res. 6:197-205(1999).
EMBL; AB02899; BAA83026.1; -.
Interpro; IPR02210; ANK.
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Mammalia; Eutheria;
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                     ----EYISLREHEEKMSGLRKSMKKVQDNSAEILAKYKKSQEEIVTLHEEIAAQKRELD
                                                              KONEE----TLTOTISOYNGRLSVLTAENAMLNSKLENEKOSKERLEAEVESYHSRLAAAI
                                                                                          KTHEETKTALSSTLDKTNRELVDVKKKCEDINQEFVKIKDENEILKRNLENTQNQVKA--
                                                                                                                       L-----QEEIAMLRLEIDTIKNQNQEKEKKCFED---LKIVKEKNEDLQKT-----I
                                                                                                                                        EEMKKSHDVIVDDLNKKLSD---VTHKYTEKKLEM--EKLLMENA---SLSKNVSRLETV
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                                                                                                                                                                                                                                                                                                                               KKLIDVEREYERSLNETRPLKRELENLKAKLAQHV-----KPEE-----HEQLK
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                                                                                                                                                                                                                                                                                                                                                                                         ----CELERE--KRGRKLTEMEG-QLKDLSAKLALSIPAEKFENMKSLLSNE---LNEKA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    -GK---LRNQIKQ--NEMLVEEFKRDEGK-----LMEENKRLQKELSM-------
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                                                                                                                                                                                  -RMLQDGILTNHLSKQKEIEMAQKKMNSENSHSHEEEKDLSHKNSM
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                                                                                      REDLINE-95286647; PubMed-7768953;

X MEDLINE-95286647; MEDLINE-95286647; MI F.T., Callaghan J.M., Steele-Mortimer O., Stenmark H., Parton R.G.

RA Mu F.T., Callaghan J.M., Steele-Mortimer O., Stenmark H., Parton R.G.

RA Campbell P.L., McCluskey J., Yeo J.P., Tock E.P., Toh B.H.;

TEA1, an early endosome-associated protein. EEA1 is a conserved alpha-helical peripheral membrane protein flanked by cysteine of fingers' and contains a calmodulin-binding IQ motif.";

R. J. Biol. Chem. 270:13503-13511(1995).

R. EMBL; L40157; AAA79121.1; ".

R. EMBL; L40157; AA
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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---TERALSRKTEEL--NR-- 1053
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Best Local Similarity 20.7
Matches 325; Conservative
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"The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).
EMBL; AE003429; AAAF45910.1; -.
Flybase; FBgn0029688; Iva.
SEQUENCE 2779 AA; 315897 MW; 1CB3965102018AEE CRC64;
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                                        ASTAVETYTVVETVVAVTAPNGKALAEYEQLNAQNAELKAVISRLRQELDELRESYPETE
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            -TVFIPPERHEKEMMALKSNITELKKQLSELNKKCGEDQEKI--
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EMBL; X78998; CAA55632.1; ...
InterPro; IPR000822; Znf-C2H2.
InterPro; IPR000306; Znf_FYVE.
Pfam; PF01363; FYVE; 1.
SMART; SMONOGA.
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                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
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Submitted (APR-1994)
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Best Local S
Matches 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SM00355; ZnF_C2H2; 1.

PROSITE; P500028; ZNR_FINGER_C2H2_1; UNKNOWN_1.

PROSITE; P550157; ZINC_FINGER_C2H2_2; 1.

DNA-binding; Zinc-finger.

DNA-binding; Zinc-finger.

SEQUENCE 1411 AA; 162465 MW; C3B17777FE34B6BD CRC64;
                   957
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L----DTIQECIKLKYAPIISLE---ECERKFKATEKELKEQL--SQQTQKYNTSEEE-
                                       LOKVKMEKEALMTELSTVKDKLSKVSDSLKNSKSEFEKENOKGKAAILDLEKTCKELKHO
                                                                                            VSSTRLDLQKKSEALESIKOKLTKQEEEKQILKQDFETLSQETKIQHEELNNRIQTTVTE
                                                                                                                                                                                                       QRADLQNHLDTAQNALQDKQQELNKTTTQLDQVTAKLQDKQEHCSQLESHLKEYKEKYLS
                                                                                                                                                                                                                                                                                                                                   LNKKCGEDQEKIYSLMSENNDLKKTMSHQYVPVKTHEEIKTALSSTLDKINREL-----
                                                                                                                                                                                                                                                             QVQEQKAHLRAAQDRVLSLETSVNELNSQLNESKEKVSQLDIQIKAKTELLLSAEAAKTA
                                                                                                                                                                                                                                                                                                                                                                      QLDKTKQQHQEQQALQQSTTAKLREAQNDLEQVLRQIGDKDQKTQNLEALLQKSKENISL
                                                                                                                                                                                                                                                                                                                                                                                                                                            LEQKTEELEGQ1KKLEADSLEVKASKEQALQDLQQQRQLNTDLELRATELSKQLEMEKEI
                                                                                                                                                                                                                                                                                       EM -- KNVPLKVSEEMKKSHDVIVDDLNKKLSDVTHKYTEKKLEME --- KLLM -----
                                                                                                                                                                                                                                                                                                                  LEKEREDLYAKIQAGEGETAV-LNQLQEKNHTLQEQVTQLTEKLKNQSESHKQAQENLHD
                                                                                                                                                                                                                                                                                                                                                                                                                           ERQLGEAHGRIKEQRQLSSEKIMDKEQQVADLQIKI-----SRLEEQIKEKVTNSTEIQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GNDSGHGGESNLALKRDDVTLLRQEVQDLQASLKEEKWYSEELKKELEKYQGLQQQEAKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---EKHNEESVSK-----KNIQATLHQKDLDCQQLQSRL-----SASETSLHRIHVE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIEALKSRFKYFESDHLGSG---SHFRKEDMLLKQGQMYMTDSQCTSTGMPVHMQSRSML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RILLDKVNGLQLQLNEEVMVADDLESE-----KEKLKSLLAAKEKQHEESLR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHDSSY--YARIGDNLDILTLLKTASEN--SNKGRELW-----KKGPSLQQ----
                                                                                                                    ----VDVKKK---CEDINQEFVKIKDENEILKRNLENTQNQVKAEYISLREHEE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LSEKGEATQKLKEELSEVETKYQHLKAEFKQLQQQREEKEQHGLQLQSEINQLHSKLLET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KSSVNELTQKNQ-TLTEN-LLKKE-----QDYTKLE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RPL--ELALPNQASYSENEILKKELEAMRTFCDSAKQDRLKLQNELAHKVAECKALALEC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----MEELKDQLKDMKVKYEGASAEVGKLRNQIKQNE----MLVEEFKRDEGKLMEE
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                                                                                                                                                                                                                                ENA-----SLSKNVSRLETVFIPPERHEKEMMALKSNITELKKQLSE
                                                                  -KMSGLRKSMKKVQDNSAETLAKYKKSQEE----IVTLHEETAAQKRE
                                                                                                                                                                                                                                                                                                                                                                                                 -------KLIDVEREYERSLNETRPLKRELENLKAKLAQ-----HV
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Pred. No. 3
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InterPro; IPRO00048; IQ.
InterPro; IPRO001609; myosin_head.
InterPro; IPRO002928; Myosin_tail.
InterPro; IPRO0292017; Spectrin.
Pfam; PF00612; IQ; 1.
Pfam; PF00613; Myosin_head; 1.
Pfam; PF01576; Myosin_tail; 1.
PRINTS; PR00193; MYOSINHEAVY.
ProDom; PD000355; Myosin_head; 1.
SMART; SM00242; MYSC; 1.
SMART; SM00242; MYSC; 1.
PROSITE; PS50096; IQ; 1.
SMART; SM00242; MYSC; 1.
PROSITE; PS50096; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                                 Q91973 PRELIMINARY; PRT; 1931 AA.
Q91973;
Q1-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-UNOV-1996 (TrEMBLrel. 17, Last annotation update)
SLOW MYCSIN HEAVY CHAIN 3.
COULTIL Japonica (Japanese quail).
Enkaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianin
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLING-96291845; PubMed-8663323;
Mikovits W. Wang G.F., Feldman J.L.,
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                                                                                                                                                                                                  EMBL; U53861; AAC59911.1; -. HSSP; P08799; 1MND.
                                                                                                                                                                                                                             "Isolation and characterization of an avian slow myosin heavy gene expressed during embryonic skeletal muscle fiber formatic J. Biol. Chem. 271:17047-17056(1996).

EMBL: U53862; AAC59912.1; -.
                                                                                                                                                                                                                                                                                           Stockdale F.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1006
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDLNEKLANLNRKYEEVCEEVLHAKKKELSAKDEKELLHFSIEQEIKDQQ---ERC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EKEITKLNEELKSHKLESIKEITNIKDAKQILIQQKIELQGKADSI--KAAVEQEKRNQQ 1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TALNENLGTVKKEWQSSQRRVSELEKQTDDLRGETAVLEATVQNNQDERRALLERCLKGE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQGNINELKQSSEQKKKQIEALQGELKIAVLQKTELENKLQQQLTQAAQELAAEKEKISV
       D2C15DD6E9BC8DE9
                                                                                                                                                                                                                                                                                                    Miller J.B.,
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       CRC64;
                                                                                                                                                                                                                                                                                                    Wade R.,
                                                                                                                                                                                                                                                           formation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AKLTMQI 1243
                                                                                                                                                                                                                                                                                                      Nelson
                                                                                                                                                                                                                                                                     chain
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Query Match Best Local Sim Matches 294;

h 8.8%; Similarity 21.8%; 94; Conservative 25

%; Score 621.5; DB 13; %; Pred. No. 7.4e-15; 258; Mismatches 530;

Indels

265;

Gaps

47;

Length

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S Adachi, J., Alzawa, K., Akahira, S., Akimura, T., Aono, H., Arai, A.,
Arakawa, T., Carninci, P., Fukuda, S., Fukunishi, Y., Furuno, M.,
Hanagaki, T., Hara, A., Hayatsu, N., Hiramoto, K., Hiraoka, T.,
Imotani, K., Ishii, Y., Itoh, M., Izawa, M., Kato, H., Kawai, J.,
Kojima, Y., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T.,
Kojima, Y., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T.,
Miyazaki, A., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Okazaki, Y.,
Okido, T., Owa, C., Saito, H., Saito, R., Sakai, C., Sakai, K., Sano, H.,
Sasaki, D., Shibata, K., Shibata, Y., Shinagawa, A., Shiraki, T.,
Sogabe, Y., Suzuki, H., Tagami, M., Tagawa, A., Takahashi, F.,
Tanaka, T., Tejima, Y., Toya, T., Yamamura, T., Yasunishi, A.,
Yoshida, K., Yoshino, M., Muramatsu, M. and Hayashizaki, Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 1545)
2 (bases 1 to 1545)
2 (bases 1 to 1545)
Carninci.P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
Carninci.P., Shibata,Y., Muramatsu,M. and Hayashizaki,Y.
Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new genes
Genome research. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Haradda, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Pujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y., Riken integrated sequence analysis (RISA) system-384-format sequencing pipeline with 384 multicapillary sequencer Genome research. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AK012454 1545 bp mRNA HTC 05-JUL-200: Mus musculus 11 days embryo cDNA, RIKEN full-length enriched library, clone:2700059D02, full insert sequence.
Submitted (10-JUL-2000) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Gemomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokoha Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
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High-efficiency full-length cDNA cloning
Methods in enzymology. 303, 19-44 (1999)
99279253
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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8.1e-44
1.0e-43
1.9e-43
8.9e-43
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B1774494 UI-R-CW0-bwj-e-06--
BE350494 ht14e12.x1 NCI_CGA,
BE241050 AP 132-r4 Pig ante,
BF181652 601804459F1 NCI_CG,
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Tsurumi-ku, Yokohama

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BASE COUNT
ORIGIN
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US-09-750-590-2 x AK012454
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Quality: 1775.50
Ratio: 4.139
Percent Similarity: 93.668
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                                                               1008
1025 ysAspLeuLysAspLysAsnValHisIleGluAsnSerTyrGluThrGlu 1041
                                                                                             942 GluIleValThrLeuHisGluGluIleAlaAlaGlnLysArgGluLeuAs 958
                                                                                                                 992 LeuSerGlnGlnThrGlnLysTyrAsnThrSerGluGluGluAlaLysLy 1008
                                                                                                                                                           polyA_site
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                                 204
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                              GGGCAAGCAAGAACGAGAGGCTGCGGGCGGACCTGGGCGCCCTTCAGA 253
                                              sCysLysGlnGluAsnAspLysLeuLysLysGluIleLeuThrLeuGlnL 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Please visit our web site (http://genome.gsc.riken.go.jp/) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Host:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     with XhoI and SstI. Cloning sites, 5' end: XhoI; 3' end: SstI.
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SKYKATKNDLETQISNLNDKLASLNRKYDQACEEKVSAKDEKELLHLSIEQEIRDQKE
RCDKSLTTIMELQQRIQESAKQIEAKDNKITELLNDVERLKQALNGLSQLTYSSGSPT
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371 c 462
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1341	hrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuIleAspSer      :::           :::	1325
1325 1132	UASNASPValGluArgLeuLySGlnAlaLeuAsnGlyLeuSerGlnLeuT	1308
1308 1082	ASPASnLY          GACAATAA	
1291 1032	rgCysAspLysSerLeuThrThrIleThrGluLeuGlnArgArgIleGln 	1275 983
1275 982		1258 933
1258 932	.sAlaLysLy	1242 904
1241 903	SpleuAsnGluLysLeuAlaAsnLeuAsnArgLysTyrGluGluValCys ::      ::        :::	1225 854
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1208 803	GlnAsnThrLysGlnAlaLeuLysLysLeuGluThrArgGluValValAs	1192 754
1191 753	luGluSerGlnAsnLysThrGluGluValSerLysLeuGlnSerGluIle            :::     :::             :::   :::  AGGAAAGCCAGAAGAAAACCAAGGAAGTCTCCAAACTCCAGACGGAGGTT	1175 704
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1158 653	GlnLysAsnSerSerValProLeuAlaGluHisLeuGlnValLysGluAl 	1142 604
1141 603	yrGluLysGluGlnGlnThrValThrGlnLeuArgGlnMetLeuGluAsn    :::             ::     ::    ::	1125 554
1125 553	rGlyThrIleGluThrLeuLysGluGluLeuLysThrLysGlnArgCysT:	1108 504
1108 503	LysGlnHisValProLeuGluGlnValGluSerLeuLysLysSerLeuSe 	1092 454
1091 453	luasnalalysGlnThrSerGluIleLeuAlaAlaGlnThrLeuLeuGln 	1075
1075 403	uLeuGlnLysTyrThrGluAlaLysLysGluLysGluLysLeuValGluG 	1058 354
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303		254

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alignment_block:
US-09-750-590-2 x BF966001
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SOURCE
ORGANISM
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LOCUS BF966001
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                                                                                                 Ratio:
Percent Similarity:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
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  seg 1/1
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Mammalia; Eutheria; Primates; Catar
1 (bases 1 to 803)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mamm
Unpublished (199)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs r@mail.nih.gov
                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10013 row: m column: 21
High quality sequence stop: 730.
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  to:
                                                                                                                                                                                                                                             312
                                                                                                                                                                                                                            /organism="Homo sapiens"
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/clone="IMAGE:4365116"
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/lab_host="PH10B (phage-resistant)"
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Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert slee 1.533 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                 : 1135.50
: 4.384
: 95.926
  BF966001
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6
                                                                                                 Identity:
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IMAGE:4365116 5',
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800 TAGC 803
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                                                                                                                                                                                                     SASPASnLySIleThrGluLeuLeuAsnAspValGluArgLeuLySGlnA 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  erAspLeuGluThrGlnIleSerAspLeuAsnGluLysLeuAlaAsnLeu 1233
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                                                                                                                                                      AGCAACAGCTGGCCGATGCTGACAGACAGCACCAAGAAGTAATTGCAATT
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                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAAATTAAGGATCAGAAGGAACGATGTGATAAGTCCTTAACAACAATC
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                                                                                                                                                                                                                                                                                                              AGATAATAAGATAACTGAACTGCTTAATGATGTGGAAAGATTAAAACAGG
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seq\_documentation\_block: LOCUS BG742332 seq\_name: gb\_est2:BG742332

BG742332 810 bp mRNA 602631492F1 NCI\_CGAP\_Skn3 Hou

Homo

EST 15-MAY-2001 sapiens cDNA clone IMAGE:4776647

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alignment_scores:
Quality: 1118.00
Ratio: 4.317
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ORIGIN
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AUTHORS
TITLE
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VERSION
KEYWORDS
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US-09-750-590-2 x BG742332
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LysSerLeuSerGlyThrIleGluThrLeuLysGluGluLeuLysThrLy
                                                            hrLeuLeuGlnLysGlnHisValProLeuGluGlnValGluSerLeuLys 1104
                                                                                                                           GCTAGTAGAAAAATGCCAAACAGACTTCTGAGATACTTGCAGTGCAAA
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                                                                                                                                                                                                           TTAAAAGACTTGTCACAGAAATACACGGAAGTAAAGAATGTGAAAGAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTCAAGAAAAACAAGCAAGAGAATGACAAGTTAAAGAAGGAGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: James Cleaver, M.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN
Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAM10629 row: h column: 24
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
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BG742332
BG742332.1 GI:14052985
EST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Robert Strausberg, Ph.D.
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Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT
Average insert size 1.5kb. Library constructed by Life
Technologies. Note: this is a NCI_CGAP Library."

Technologies. Note: this is a NCI_CGAP Library."
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Identity:
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KEYWORDS
SOURCE
ORGANISM
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AUTHORS
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                                                                                            FEATURES
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LOCUS BG570716
                                                                                                                                                                                                                                                                                                                                 TITLE
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|||||||||||||
| ACAGATTTCTAGCTTAAATGACAAATTGGCCAATCTGAATAGAAAGTATG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAAGGAAGAAAGCCAAAACAAAATGGAAGAAGTCTCCAAACTTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH Laboratories, Inc.

cDNA Library Preparation: CLONTECH Laboratories, Inc.

cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG570716.1 GI:13578369
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
BG570716
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                                                                                                         Plate: LLCM1572 row: k column: High quality sequence stop: 734.
                                                                                                                                             found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov
                                                                                                                                                                                                                                                                                                              Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
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                                                                                          Location/Qualifiers
                                                                                                                              97
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BASE COUNT
ORIGIN
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US-09-750-590-2 x BG570716
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Percent Similarity:
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:||||||||||||||||
:||TGGCACAATTGAAAATCTAAAGGAAGAACTGAAGAGTATGCAAAGGTGTT 251
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                                                                                                                                           CAGAATACTAAACAAGCATTAAAAAAATTAGAGACTAGAGAGGTAGTTGA 501
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/inte="Organ: placenta; Vector: pDNR/LIB (ggccattatggcc);
Site_1: SfiI (ggccgcctcggcc); Site_2: SfiI (ggccattatggcc);
5' and 3' adaptors were user in cloning as follows: 5'
adaptor sequence: 5'-ACGCCATTATGGCC-3' and 3' adaptor
sequence: 5'-ATTCTAGAGGCCGACGTG-dT(30)BN-3'
(where B = A, C, or G and N = A, C, G, or T). Average
insert size 1.3 kb (range 0.5-4.0 kb). 15/15 Ononies
contained inserts by PCR. This library was enriched for
full-length clones and was constructed by Clontech
laboratories (Palo Alto, CA). Note: this is a NIH_MGC
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US-09-750-590-2 x AU118158
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: genomics@hri.co.jp
HRI human cDNA project; 5'- 6 3'-end one pass sequencing: Helix
Research Institute; cDNA library construction: Department of
Virology, Institute of Medical Science, University of Tokyo, and
Helix Research Institute.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Helix Research Institute
1532-3 Yana, Kisarazu, Chiba 292-0812, Japan
Tel: 81-438-52-3951
Fax: 81-438-52-3952
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Unpublished (2000)
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                                                                                                                                                                                                                                                                                                                        373
                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
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/dev_stage="embryo, 10 weeks"
/notc="vector: pME18SFL3"
3 a 116 c 164 g 191 t 4 others
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KEYWORDS
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|TCTGAAAACACTAACTTGAAGAACATGATGAGTAATCAGTATGTGCCAGT
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
              Homo sapiens
                                                            mRNA sequence.
BC176687
                                                                                BG176687 1060 bp
602313291F1 NIH_MGC_85
                                                BC176687.1
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Euteleostomi;
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1123 gCysTyrGluLysGluGlnGlnThrValThrGlnLeuArgGlnMetLeuG
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                                                                                                                             AspLeuLeuGlnLysTyrThrGluAlaLysLysGluLysGluLysLeuVa 1073
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Ratio: 3.503
nilarity: 82.320
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National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Louis Staudt, M.D., Ph.D.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lnl.gov
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Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.867 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               spGlnGlnGluArgCysAspLysSerLeuThrThrIleThrGluLeuGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uValCysGlu.GluValLeuHisAlaLysLysLysGluLeuSerAlaLys 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               eSerAspLeuAsn.GluLysLeuAlaAsn.LeuAsnArgLysTyrGluG1 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGACTTGTCTAAATATAAAGCAACAAAAAGTGATTTGGAGACACAGAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGTTCAGAATACTAAACAAGCATTAAAAAAATTAGAGACTAGAGAGGTA
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                                                                                                                                                                                                                                                                                                                                                            uGlnGlnGlnValArgSerLeuGlnGln 1351
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                                                                                                                                                                                                                                                                                                                        CACACAGAAAAAGCGAAAAACAGAGCGC 1059
                                                                                                                                                                                                                                                                                                                                                                                                  CACACAGTGGGGACCCCACAGAAGGAAAAACACGTGACGGAGACGAGTGA 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                      TyrGlySerGlySerProSerLysArgGlnSerGlnLeuIleAspSerLe 1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCGGTGGCACGACATAAACGAGGACCCACGAGGGGTGTCCAACAACAC 981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAAGCTCACCAAGCAAGCAATACCAGGAATTGGGTCACACAAGCTTGG
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Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
Mases 1 to 799)
                                                                                                                                                                                  AA986309 799 bp mRNA EST 28-MAY-19: uc79c06.xl Sugano mouse kidney mkia Mus musculus cDNA clone IMAGE:1431850 3' similar to TR:Q28282 Q28282 C3VS PROTEIN.
                                                                                                                              AA986309.1
                                                                                          nouse mouse
                                                                                                                                GI:3167633
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alignment_block:
US-09-750-590-2 x AA986309/rev
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                                                                                                                                                                                                                               189 ralaLeuMetLeuGlyCysGluTyrGlyCysLysAspAlaValGluValL
                                                                                                                                                                                                                                                                                                173 LeuIleAspArgGlyAlaAspIleAsnSerArgAspLysGlnAsnArgTh
euIleLysAsnGlyAlaAspValThrLeuLeuAspAlaLeuGlyHisAsp
                                                                                                                                                                                                  AGCTCTGATGCTGGCTTGCGAGTCGGGTTGCAGAGATGCCGTAGAAGTCC
                                                                                                  TCGTGAAAAATGGTGCCGACCTGACCTTGCTGAATGCCCCTTGGCCACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: mouseest@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T.,
Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M.,
Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B.,
Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: primer name ambiguous High quality sequence stop: 450.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WashU-HHMI Mouse EST Project
Washington University School of MedicineP
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The WashU-HHMI Mouse EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Possible reversed clone: similarity on wrong strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Marra M/Mouse EST Project
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314 286 1810
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note-*organ: kidney; Vector: pME18S-FL3; Site_1: DraIII (CACTGTGTG); Site_2: DraIII (CACCATGTG); lst strand cDNA was primed with an ollogo(dT) primer [ATGTGGCTTTTTTTTTTTTTTTT]; double-stranded cDNA was ligated to a DraIII adaptor [TGTTGGCCTACTGG], digested and cloned into distinct DraIII sites of the pME18S-FL3 vector (5' site CACTGTGTG, 3' site CACCATGTG). XhoI should be used to isolate the cDNA insert. Size selection was performed to exclude fragments sert. Size selection was performed to exclude fragments (University of Tokyo Institute of Medical Science). Custom primers for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 1020.50
: 4.270
: 90.875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Institute of Medical Science). Custom primers sequencing: 5' end primer CTTCTGCTCTAAAAGCTGCG primer CGACCTGCAGCTCGAGCACA."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone-"IMAGE:1431850"
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JOURNAL COMMENT
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AUTHORS
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LOCUS BG030772
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_est2:BG030772
                                                                                                                                                Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP
                                                                                                                                                                                                                                           Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 742)
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602297763F1 NIH_MGC_87
                  cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information
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Consortium/LLNL at:
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GluAlaPheGluLysGluValGlyIleIleLysAlaSerLeuArgGluLy 1173
                                                                                                                                                                                                                                                                                               luAsnGlnLysAsnSerSerValProLeuAlaGluHisLeuGlnValLys 1156
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                                                                                                                                                                                                                                                              AGAATCAAAAGAACTCTTCTGTACCCCTGGCAGAGCATTTGCAGATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                               AspLeuLeuGlnLysTyrThrGluAlaLysLysGluLysGluLysLeuVa 1073
                                                                                                                                                                                                                                                                                                                                                                                             GTGTTACGAGAAAGAGCAGCAGACAGTGACCAAACTGCATCAATTGTTGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTAATGGCACAATTGAAAATCTAAAGGAAGAACTGAAGAGTATGCAAAG
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KEYWORDS
SOURCE
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LOCUS BG253578
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US-09-750-590-2 x BG253578
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cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
cDNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM10293 row: p column: 05
High quality sequence stop: 690.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 883)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
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BG253578
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Ratio: 4.107
milarity: 89.377
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Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NHH_MGC Library."
                                             BG253578
                                             from: 1
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                        CATGAACAGATT
                                                                                        laGluCysLysAlaLeuAlaLeuGluCysGluArgValLysGluAspSer
                                                                                                                  AAAACAAGAGCGATGGAAGCTCCAAAAATGAACCTGGGCACACAAGTGGG
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                                                                                                                                                                                                           GCTTCTTAAACAAGGTCAGATGTATATGGCAGACTCACAGTGTACTTCCC
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seq\_documentation\_block: LOCUS BG120762

BG120762 883 bp mRNA 602348520F1 NIH\_MGC\_90 Homo

883 bp

sapiens cDNA clone IMAGE:4443316

mRNA sequence

DEFINITION

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BASE COUNT
ORIGIN
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US-09-750-590-2 x BG120762
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TITLE
JOURNAL
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                    ysGluGluGluSerGlnAsnLysThrGluGluValSerLysLeuGlnSer 1189
                                                                        GluasnGlnLysasnSerSerValProLeuAlaGluHisLeuGlnValLy 1156
                                                                                                                                                                                                                                                                                                                                rLeuSerGlyThrIleGluThrLeuLysGluGluLeuLysThrLysGlnA 1123
                                                                                                                                                                                                                                                                                                           TCTTAATGGCACAATTGAAAATCTAAAGGAAGAACTGAAGAGTATGCAAA
AGGAAGAAGCCAAAACAAAATGGAAGAAGTCTCCAAACTTCAGTCG
                                                                                                                                                                                                                                GGTGTTACGAGAAAGAGCAGCAGACAGTGACCAAACTGCA, TCAATGTTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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1 (bases 1 to 883)
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/db_xref="taxon:9666"
/clone="IMAGE:4443316"
/clone="IMAGE:4443316"
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/site_2: Sall; Cloned unidirectionally; oligo-dT primed.
/site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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                                                       Wu,T., Qian,B., Huang,Q., Huang,C., Kang,B., Gao,X., Xu,Z., Xiao,Xu,X., Li,N., Peng,Y., Liu,F., Qu,J., Song,H., Cheng,Z., Zeng,I Xu,S., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong,M., Lu,G., Yang,Y., Gu,Y., Chen,Z. and Han,Z.
Homo sapiens cDNA GK- clones
Unpublished (2000)
Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
201203, P. R. China
Tel: 86-21-50801912 (ex.45)
Fmax: 86-21-50801922
Email: hanzg@chgc.sh.cn
This clone is available at CHGC
Location/Qualifiers
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AV692878 GKC Homo sapiens cDNA clone GKCCYD05
AV692878
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|AGCGAAATTTGACACACATGCAAGATGAAGTAAATGTGAAGTCACATCAG
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                                                                                                                                                                             AspMetLeuLeuLysGlnGlyGlnMetTyrMetThrAspSerGlnCysTh 394
                    sGlnHisGluGluSerLeuArgThrIleGluAlaLeuLysSerArgPheL 361
                                                            GCAACATGAAGAAAGCTTAAGGACTATTGAGGCTCTGAT....AGATTTA
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/lab_host="SOLR"
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4.482
88.755
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LOCUS BG121584
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602351531F1 NIH_MGC_90 Homo sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Ratio:
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NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
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cDNA Library Arrayed by: The I.M.A.G.E. Consortium
CDNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov: m column: 08
High quality sequence stop: 722.
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/clone_IIM_NGE:4449967"
/clone_IIM_NGE:4449967"
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/note="Organ: liver; Vector: pCMV-SPORT6; Site_1: NotI;
/note="Organ: liver; Vector: pCMY-SPORT6; Site_1: NotI;
/site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies
Note: this is a NHI_MGC Library."

Note: this is a NHI_MGC Library."
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REFERENCE
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LOCUS BG260897
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 974)
NIH-MGC http://mgc.ncl.nih.gov/.
National Institutes of Health, Mammalian Gene Collection of Unpublished (1999)
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                                                                                                                                 BG260897.1 GI:12770713
                                                                                                                                                       mRNA sequence.
                                                                                                                                                                  602372502F1 NIH_MGC_93
                                                                                                                                                                                 974 bp
                                                                                                                                                                                  mRNA
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                        Gene Collection (MGC)
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alignment_block:
US-09-750-590-2 x BG260897
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Plate: LLAM10314 row: c column: 02
High quality sequence stop: 668.
Location/Qualifiers
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CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
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/note="Organ: bladder; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONETECH Laboratories, Inc.
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BF694526
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA Library Preparation: CLONETECH Laboratories, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
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Location/Qualifiers
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BASE COUNT
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US-09-750-590-2 x BF694526
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                                                                                                                                                         spLeuSerLysTyrLysAlaThrLysSerAspLeuGluThrGlnIleSer 1224
                                                                  AGGAATTACTGCATTTCAGCATTGAGCAAGAAATTAAGGATCAGAAGGAA
                                                                                                                                                                                                                TGAGGAAGTTTTGCATGCCAAAAAGAAGGAAATATCTGCAAAAGATGAGA
rLeuGlnGlnGlnValArgSerLeuGlnGln.GlnLeuAlaAspAlaAsp 1357
                                  ThrTyrGlySerGlySerProSerLysArgGlnSerGlnLeuIleAspSe 1341
                       Quality:
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alignment_block:
US-09-750-590-2 x BG036163
                                                                                                                                                                                                                                                                                    alignment_scores:
Quality:
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ORIGIN
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AUTHORS
TITLE
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ORGANISM
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eLeuAlaLeuLySGluHisLeuThrScrAspAlaAlaThrGlyAsnHisA 522
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAM10141 row: j column: 24
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1 (bases 1 to 941)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence start: 5
High quality sequence stop: 653.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
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BG036163.1 GI:12431039
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602326193F1 NIH_MGC_90 Homo saplens cDNA clone IMAGE:4414199
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Site_2: Sal1; Cloned unidirectionally; oligo-dT primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."

Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                969.50
4.179
93.173
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                                                            705 uLysValCysLeuAspAsnLysLeuLeuThrGlnGlnValAsnAsnLeuT 722
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AAGTTTATT TGGGATATAGCTCTAAGGACAGCACATACTAACCAT . . . 694
                                                                                               ArgIleThrGluLeuThrSerLysAsnGlnThrLeuGlnLysGluIleGl 705
                                                                                                                              uLeuGluAsnLeuLysAlaLysLeuAlaGlnHisValLysProGluGluH
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|ACTTGAGAATGTTAAGGCCAAGCTTGCTCAGCACGTCAAACCAGAGGAAC
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